GEORGENE H. SEWARD

SEX AND THE SOCIAL ORDER

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CONTENTS

TO THE

Men and Women

OF THE

Postwar World

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PREFACE

DURING the past generation extraordinary interest has centred around relations between the sexes. Students have tackled the problem from a great many angles, which has resulted in a bewildering array of fact and fancy. Even if we confine ourselves to *facts* – facts gathered by the strict application of scientific method – we shall still be faced with a vast, unorganized literature. The biologist, experimenting with animals in laboratory and field, is primarily concerned with problems of internal mechanics. The social scientist, on the contrary, sees sex so largely as a cultural product that he often seems to neglect the physiological basis. The psychologist, whose task it is to explain the behaviour of individuals throughout the evolutionary scale, must hold the balance between biological and social scientist. Working in this longitudinal dimension, he is impressed by the trend toward increasing control of individual by group with a corresponding decline in the relative influence of internal directives.

At the human level, sex takes on a variety of meanings Different values are given reproductive activities in different groups, and the social roles assigned men and women depend on the structure of the culture as a whole.

The present volume represents a phylogenetic approach to problems of sex in the life of the group.

Since material that does not measure up to the criteria of scientific method has been for the most part excluded, the reader will look in vain for many familiar landmarks. In treating the sexual behaviour of lower animals the author has confined herself to carefully controlled observations and for this reason has had to leave out much interesting natural history. Owing to the paucity of scientific material, she has had to be content with rodents to represent lower mammals and primates to represent those higher on the scale. At the human level psychoanalytic and other theories are discussed only in so far as they have led directly to scientific studies of sexual behaviour. Practical information concerning erotic techniques is also omitted except where it has been the subject of

scientific investigation. By the same token, the more medical aspects of sexual pathology and crime have been excluded, although certain clinical case histories have been brought in from time to time to throw light on the relative importance of physiological and social influences.

The scientific facts concerning sex in the social order having been presented, there remains the question of their implication for human happiness. We are in the process of building a new world, and we cannot escape the challenge of showing how factors related to sex may be mobilized in that reconstruction. In the light of the literature on sex differences, there has been suggested a reformulation of sex roles which should improve the relationship between men and women and their social usefulness as individuals It is hoped that this may be a minor contribution to the tremendous task of post-war planning.

It gives the author the greatest pleasure to put on record her appreciation to those who have generously helped in the preparation of this book Special thanks go to the indefatigable patience of her husband, John Perry Seward, who gave his time and skill unsparingly in criticizing the manuscript at all stages of its development. Warm appreciation is also extended to Dr Robert L Dickinson, who not only gave the benefit of his great medical wisdom, but also allowed access to special literature in the New York Academy of Medicine not usually accessible to laymen The author is also deeply indebted to Gardner Murphy, A. H. Maslow, Ruth Benedict, and Ralph Linton for their many valuable suggestions. A. H Maslow and L M. Hanks, Jr., were also kind enough to permit use of some of their important unpublished data on the northern Blackfoot The author is greatly obliged to Frank Beach for making available books and illustrative material that would have been otherwise inaccessible.

Personal gratitude should also be expressed to President Katharine Blunt of Connecticut College for the financial aid she granted the author through the Faculty Research Fund, and to the staff of the Palmer Library for their expert skill and graciousness in obtaining obscure volumes on Inter-library Loan.

Last but not least, the author wishes to thank her daughters Barbara and Joan Perry for generously devoting their vacation days to helping with the bibliography.

The many colleagues and publishers who have kindly granted permission to reproduce material receive special mention where their material appears in the text.

GEORGENE H. SEWARD

BOSTON, MASS.,
December 1945

A FOOTNOTE TO THE PELICAN EDITION

To keep *Sex and the Social Order* current we should have to add to the chapter on 'Changing Sex Roles in Western Culture' a recent change in Soviet Russia which has apparently reversed the high status previously enjoyed by women there. Soviet policy in this area as in other areas of social life is too unstable and unpredictable to justify our placing confidence in it. The social experiment on equalizing sexual standards and social sex roles is, as far as we can tell, merely a matter of historical interest

GEORGENE H. SEWARD

LOS ANGELES, CALIF.,
1 December 1953

CHAPTER I

Orientation

SOCIETY'S PROBLEM

Cultural Demands. The biological necessity of preserving the species assures sex a position of prestige at all times and in all places Sex, broadly conceived, includes the social role of male and female in the life of the group as well as mating behaviour. As we ascend the vertebrate scale, society assumes increasing control over individual conduct until at the human level we can understand sex only against the setting of the culture as a whole.

Culture is important in the regulation of all phases of individual life The sexual relationship is no exception and is institutionalized in all groups. Whether we have in mind group marriages among the Eskimos, Oriental polygyny, or the monogamy of the West, some form of pressure is exerted upon the developing individual to fit him into the accepted mode. In our society, along with learning not to eat with his fingers, he must learn not to handle his genitals, or if he comes from Buka, he finds that he is forbidden to speak to his sister in private just as he is forbidden to eat in the presence of his sister-in-law.[93]* Societies differ not only with respect to the nature of the restrictions but also in the strictness with which they are enforced. They are often imposed without regard to their possibly harmful effects upon the individual. In the case of the more basic life-preservative needs, e g. hunger, social regulation is necessarily more superficial and is concerned only with such external circumstances as time and manner of eating and the particular foodstuffs available Society cannot, however, penetrate more deeply. Edible substances must be provided at frequent intervals in sufficient abundance to sustain life. There are limits to ersatz There can be no sublimation of hunger.

*Superior numbers refer to the Bibliography at the end of the text

Samoan ways contrast sharply with the rigid mores of the Chukchees

Cultural Dynamics Although we have outgrown the concept of absolutes in human nature and fully recognize the individual's dependence upon the culture medium in which he grows, we must admit physiological limits to society's moulding power. There is a matrix within which culture must work. The result is limited by the nature of the raw material as well as by the external forces applied. There is a tendency to underemphasize the role of the individual in the effort to show the impact of the cultural pattern. A sounder attitude would pay due respect to those individual needs which would unfold in any cultural context, at the same time seeking the important ways in which society modifies the natural tendencies and integrates them in the more inclusive pattern. This conception recognizes an *inter*action between individual and group because not only does the group affect its constituent members, but the members through their needs claim reciprocal action from the group. The individual does not remain passive and, like the chameleon, assume the colour of the background, but he is dynamic, *sui generis*, and in turn modifies the group in which he lives This amounts to saying that society should not content itself with attempts to adjust the individual but that the individual should fit his society to meet his needs

PAST AND PRESENT APPROACHES TO THE PROBLEM

Instinct Doctrine Under the influence of the Church it was long customary to make a sharp distinction between man and lower animals This tendency reached its culmination and clearest expression in the philosophy of Descartes. According to him, animals were automata, impelled by blind instincts, while man was guided by an immortal soul, which, transcending his mortal body, gave a rational character to his passions Darwin sounded the death knell of Cartesian dichotomy. The new emphasis was on continuity between man and animals.

problems of sex, conditioning has been regarded by many as of greater significance than nature.[305, 689]

Although behaviourism served scientific progress by carrying analysis beyond the categorical thinking of the instinct period, it had its own limitations. In their enthusiasm for the environment, behaviourists neglected the organism. The concentration of attention on the objectively observable units, presumably aroused by specific external stimuli, resulted in a failure to keep in focus the integrity of the organism as a whole. Between the stimulus elements on the one hand and the behavioural elements on the other the individual was lost sight of.

Psychoanalysis. Meanwhile medical science was coping with problems of sexual deviations and pointed out their importance for normal living Krafft-Ebing's exhaustive compendium, *Psychopathia Sexualis*,[343] was representative of this trend. One of the great pioneers of the early period was Havelock Ellis, whose classical *Studies in the Psychology of Sex*[188] attacked the problem from all angles, not neglecting its relation to society. In the general preface to the series he wrote in 1897, 'I regard sex as the central problem of life.'[188, p xxx] He proved his sincerity by devoting his life to compiling material describing sexual phenomena and by publishing it in the face of the Victorian decency wave at the risk of imprisonment.

Simultaneously on the continent there emerged another pioneer in this forbidden territory who was to exert the greatest influence upon the future of both normal and abnormal psychology. Sigmund Freud, while a student of Charcot in Paris, was impressed by the great master's firm conviction that neurosis could always be traced to some difficulty in the patient's sex life if one looked deeply enough It was with this idea fermenting in his mind that Freud returned home to Vienna to put into practice what he had learned and to develop theories that have revolutionized psychopathology. Following the lead of his colleague, Breuer, he supplemented the traditional hypnotic treatment with a new 'talking-out' cure which gradually became elaborated into psychoanalysis.[217] The search for the root of the patient's difficulty led far

into his past experiences, even going back to early infancy. Very frequently it involved some phase of sexual development. Freud charted the normal growth of sexual tendencies as a sequence of predictable stages. Early infancy was a non-personalized, non-socialized period when the individual could be regarded only as an 'id' and his protosexual impulses were necessarily very general. They were still unlocalized and without an object. Since they were associated with certain sensitive areas of the skin and mucous membranes of the individual's own body, they were called 'auto-erotic'. This stage was followed by the emergence of the 'ego', representing awareness of the self in relation to the surrounding world. An object was provided toward which the developing sexual urge or 'libido' might be directed, and a period of narcissism or self-love prevailed. During this phase the individual learned that the unbridled impulses of his instinctive nature were not acceptable to the group. The prudent and opportunistic ego found it expedient to relinquish immediate satisfaction in order to ensure greater satisfaction in the future and to avoid social punishment [218]

The next important step in psychosexual development was characterized by emotional attachment to the mother. In boys an ambivalent attitude was developed toward the father, who was hated as a powerful rival for the mother's affection and, at the same time, respected as the representative of authority. Mythological expression for this phase was found in the story of *Oedipus Rex* A little later when the group mores had become internalized the punishment was transferred from the father to an internal censor, the 'superego'. Unacceptable impulses, including the incestuous Oedipus complex, were repressed with a strong sense of guilt According to Freud these infantile forms of sexuality were followed by a latency period, which continued until early adolescence. A renaissance of narcissism then preceded a short homosexual phase which in turn gave way to the heterosexuality of adulthood [216] It frequently happened, however, that the individual was unable to meet the exacting demands of society and consequently failed to progress smoothly to maturity. He might

remain fixated at any level, he might regress to earlier levels in the face of adult conflict, or he might make some other inadequate adjustment Such failures provided the psychoanalyst with his case material

Although psychoanalytic concepts today are much broader in scope than Freud's original libido theory, he deserves a full measure of credit for the challenging hypotheses that have initiated the scientific investigation of personality dynamics, and for the brilliant insights that have guided clinical practice and revealed the social necessity for adjustment between individual need and cultural demand.

CURRENT TRENDS

The early attempts to explain sexual behaviour have been outgrown by a rapidly maturing science, but they have each made an imperishable contribution and prepared the ground for newer developments. With respect to the problem of sex in society we find three current approaches They reveal their heredity but at the same time show the effects of environmental change

Biological The biological trend may be regarded as a modern ramification of the instinct controversy. In the first place, the effort to get away from the loose thinking of the instinct generation has led to a more careful analysis of concepts. Definitions are no longer stated in vague categorical terms but must be translated into objective operations which may be readily observed and measured. An extension of the experimental method to problems of motivation has resulted. Special impetus has been given to the investigation of endocrine factors in reproductive behaviour A second outcome of the instinct controversy may be found in the numerous studies on the effect of external stimuli operating within a standard environment. Experiments of this kind exemplify the biological approach since they deal for the most part with animals and have important bearings on evolutionary theory In the ensuing discussion we shall survey this interesting material and try to determine what light it throws on problems of sex in society.

Cultural The behaviourists in the first flush of their enthusiasm for analysis saw in the environment only a congeries of specific isolated stimuli. The over-simplicity of this conception has given way to Lewin's field theory,[364, 365] which substitutes for stimulus and response an integrated and meaningful field consisting of a social situation bearing a dynamic relationship to its individual members. This notion has been applied by Brown[109, 110] and others to problems of social and abnormal psychology In contrast to the Freudian depth psychology as well as McDougall's instinct doctrine, the field theorists play down heredity and the past and focus their attention on the immediately present field.

A movement paralleling the field theory is represented by the recent anthropological studies showing the impact of the culture pattern on individual members. The writings of Malinowski,[391, 392, 393] Benedict,[80] and Mead[405, 409] were in the van in demonstrating the great potentiality for change inherent in even such supposedly stable compounds as instincts. The constants of human nature appeared to be not absolute after all but dependent upon the situation in which they occur It is possible to find striking cultural contrasts in the development of sexual behaviour, in marital and maternal patterns, and in the respective roles of men and women. Although this concept of behavioural relativity has been the best possible antidote to the stagnation of the instinct ideology, there is a danger that the cure may be worse than the disease By repeated references to the varying customs of different peoples we may reiterate the importance of nurture until we have hypnotized ourselves into a denial of nature. Such a conclusion would conveniently relieve us of the responsibility for experimental analysis and we should find ourselves back in the armchair instead of in the laboratory. Description would again have been substituted for explanation, only now the verbal magic of instinct would have succumbed to the verbal magic of cultural pattern

Clinical Freud bequeathed to contemporary psychology a clinical approach which seems to have generated sufficient heat to weld together the biological and cultural trends When

an urgent biological need meets an unyielding cultural obstruction, the clinician is called in to pick up the pieces. He must be familiar with both aspects of the situation in order to effect an adjustment between them. Freud performed a priceless service in opening our eyes to many unsuspected sources of conflict and in removing social taboos from the scientific investigation of sexual difficulties. Although the original Freudian concepts are limited to bourgeois European culture, they have been more broadly interpreted by such recent exponents of analysis as Horney,[298] and their adaptation to different groups has been attempted by a number of anthropologists including Malinowski,[392] Kardiner,[319] and Fromm [221] In the following pages our aim will be an evaluation of the biological and social factors in the causation of sex problems as well as an evaluation of therapeutic method

PSYCHOLOGY'S TASK

The problems of sex in the social order have been treated by various experts, who have considered them from the viewpoints of their specialities As we have already suggested, our task will be to bring these diverse approaches into relationship with one another in the hope of providing a more unified understanding of sexual behaviour than is possible with any one alone. The psychologist is in a peculiarly favourable position to do this He stands as intermediary between the biologist, whose chief concern is with the functioning of the separate organs of the body, and the anthropologist, whose unit is the cultural group. *The psychologists' task is to explain the behaviour of the individual as a whole,* composed of various organ systems and affected by various cultural influences. It is the psychologist who must evaluate the biological urges welling up from within and the social forces operating from without. Moreover, the individual studied is 'whole' not only in a structural sense but also in the sense of normal functioning. Therefore it behoves the psychologist to see normal functions caricatured in pathology so that he may better comprehend their underlying dynamics. Even then he has not finished his task but o further in order properly to appreciate

the abnormalities: he must consider them in relation to the cultural background in which they occur. It is only by observing the individual from the perspective of the combined biological, cultural, and clinical approaches that the psychologist may serve in his capacity of human engineer to point out the errors society has committed in the name of civilization and to suggest means of preventing their recurrence in the future

CHAPTER 2

The Dynamics of Sexual Behaviour

NATURE VERSUS NURTURE

THE problem of the role of sex in the social order is a phase of the larger nature-nurture problem. In the following chapters we shall try to unravel the relative roles of social forces and instinctive urges in determining the relations between the sexes Starting with the lowest vertebrates and gradually working our way up the evolutionary tree we shall discover an increasing effectiveness of the social group over individual conduct. For example, the sex life of the rodent is largely a function of internal drive, while among primates social factors have become sufficiently powerful to control and even to counteract instinctive tendencies. At the human level culture induces such wide variations in sexual behaviour from one society to another that it is sometimes hard to recognize them as expressions of the same biological need

In order to understand how society exerts its influence we should be familiar with the internal dynamics of sexual behaviour. Of these, the most primitive mechanisms are chemical

CHEMICAL RHYTHMS

Rhythm is a universal characteristic of nature. Wave formation of physical energy is well established and suggestive of the periodic functions of living organisms. In trees and plants we find inherent flowering and leaf-bearing cycles [395] Among animals the vegetative drives for the most part display rhythms that reflect the periodic ebb and flow of organic processes. Of these, no better illustration can be found than the female sexual cycle of which the author previously wrote,[539, p 153]:

> So striking is this rhythm with its menstrual phenomena in women that it gripped the imagination of primitive peoples who lacked sufficient information to regard it as a natural event Ellis . gives a

wealth of illustrative material showing the superstition and taboo with which it was surrounded. ... Traces of this attitude may still be found in modern times

Corresponding phases may be worked out between the menstrual cycle and the heat or oestrous rhythms displayed by many lower mammals. Below the mammals sexual cycles are not recurrent throughout the year but are limited to a mating season and are exhibited by males as well as females.[512]

The key to the secret of these sexual rhythms lies in the intricate network of the endocrine glands. It is the function of these glands to pour their secretions or hormones directly into the blood stream by means of which they are enabled to reach and affect organs at a distance. They form a system of internal checks and balances, which serves to maintain relative constancy of the internal milieu necessary to life and health. When the balance is temporarily disturbed, a physiological tension arises, accompanied by strong cravings and motor restlessness until relieved by the goal object. In general, this is the basic mechanism underlying the reproductive drives. To understand how it works we must try to trace the pattern of interacting endocrines involved in these functions.

The Pituitary. The extensive literature in this field reveals a growing emphasis on the pituitary gland as the co-ordinator of the endocrine system. Even the elevated location of this structure in the brain stem suggests its superiority. Although there are two main parts, the anterior and the posterior lobes, the former bears more directly on behaviour. A large number of hormones have been isolated from this part of the gland, some having to do with individual growth and others with that special form of growth known as 'reproduction'. As indicated in Fig. 1, three main groups of trophic hormones from the anterior pituitary co-operate in stimulating reproductive activities

The *gonadotrophic* hormones activate the primary sex glands or gonads. Without them normal structural and behavioural sex development is impossible, and their removal is followed by involutional changes in the reproductive tract which simulate castration effects [14] On the other hand, these devastating

withdrawal effects may be counteracted by continued injections of anterior lobe extracts.[589]

The *lactotrophic* hormone, prolactin, is also of importance in reproduction. It has been found to stimulate secretory activities of the crop glands in certain birds as well as of the mammary glands in mammals.[502, 503] It has even been found to induce broodiness in the jewel fish provided that the nervous mechanisms are sensitized by a first spawning.[452, 453] Moreover, it contributes to the initiation of behaviour appropriate to the feeding of young in many animal forms. As we shall see,

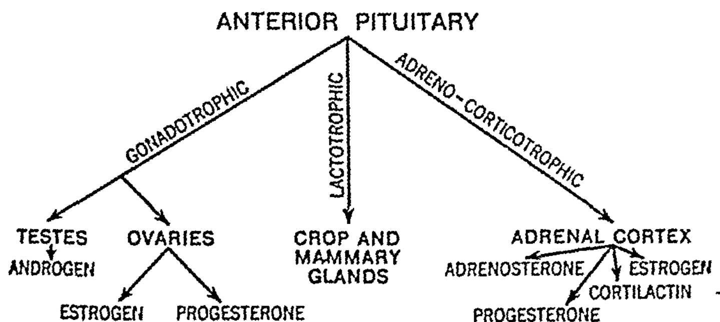


Fig. 1. Pituitary hormones that aid the reproductive processes.

maternal behaviour has been induced in virgin rodents by lactotrophic hormones.[502, 504]

In addition to these two important pituitary-reproductive hormones there is the *adrenocorticotrophic* group, which stimulates the cortex of the adrenals to secrete certain supporting reproductive hormones. To a large extent these duplicate the combined action of the gonado- and lactotrophic hormones.[191, 293]

The Gonads. The primary sex glands are the testes in males and the ovaries in females, which when acted upon by the anterior pituitary and synergic endocrines, produce their androgens and estrogens. Not only do these secretions have a priming effect on the reproductive tract but they also determine secondary sex characters and sexual behaviour. The

role of the gonads has been experimentally demonstrated with a variety of techniques. Conspicuous cases of sexual transformation have been reported. For example, crowing and treading have been observed in domestic poultry following the administration of androgens[266, 698] Among mammals feminization of male as well as masculinization of female behaviour has been accomplished in the rabbit by injecting extracts of the opposite sex.[215, 302] In rats, females injected from birth with male hormones will copulate with females in heat and may even attempt it with normal males despite strong resistance Moreover, normal males seem to be strongly attracted to the treated females.[342]

The contrast in the action of the male and female hormones is, however, less extreme than might be supposed. There is a close chemical and functional relationship between them, so close indeed that the gonads of each sex have been found to secrete the hormone of the opposite sex in addition to their own.[300, 434] This undoubtedly accounts for cases of spontaneous sex reversal observed in a variety of animals.[70, 456] Noble and Wurm describe a female heron which displayed the distinctively masculine snap-hiss courtship ceremony. Moreover, in this species, the sex hormones were apparently non-specific in their effects. Androgen injections in adult females or in the young of either sex resulted in female nest building and brooding in addition to male copulation, while estrogens alone failed to stimulate any breeding activity in either sex.[458] Mice have also been found to display female as well as male mating behaviour after treatment with the male hormone although estrogens elicited only the female patterns[189]

Neural mechanisms for activating both male and female patterns are present in each sex and may be excited by either kind of hormone.[56] Since the male pattern is set off more readily by androgens and the female by estrogens, masculine behaviour normally predominates over feminine in males while the converse holds for females[271]

The hormones, however, are not the only means of activating the neural centres External stimuli also have this power, and inconsistencies between internal and external agents

explain many anomalies of behaviour. For example, in the green lizard, *Anolis carolinensis*, androgen injections have been found to elicit both male and female sexual behaviour in males, depending on whether the animal has dominant or subordinate status in the group.[451] Among rats, males, hypersexed by androgens, showed unmistakable elements of the female oestrous pattern when mounted by other vigorous males.[65] Conversely, females have been found to exhibit male copulatory behaviour in the presence of a receptive female.[64] Moreover, either male hormones injected into castrated females or female hormones injected into castrated males have the effect of increasing sexual excitement This may be expressed in behaviour appropriate to either sex according to the demands of the external situation. Thus the particular form of behaviour on a given occasion seems to depend on the balance of power exerted on the nerve centres by internal and external stimulating agents [37, 39, 58, 68]

Meanwhile, within each sex, the importance of gonad secretions has been demonstrated in a number of species by the hormonal induction of precocious sexual behaviour and also by endocrine treatment after removal of sex glands from adults. In the male, disintegration of the sexual pattern has followed castration in a variety of animals;[132, 593, 594] on the other hand, full sex functioning has been effected in impotent, immature, and castrated rats by androgen injections.[585, 586, 588] In immature chicks both crowing and treading have been induced as a result of androgenic treatment.[263, 461]

Turning now to the female sex hormones, we find that in the egg-laying vertebrates the chief need is to maintain the oviducts on a sufficiently high plane of function to evacuate the eggs.[14] This is accomplished by oestrogen alone. In those forms, however, which bear live young, a mechanism had to be developed for the retention and nutrition of the fetuses within the mother. Consequently there evolved a second ovarian hormone, *progesterone*, which, as the name implies, prepares the way for gestation It is secreted at the time of ovulation. In the event of fertilization, it maintains its function during the ensuing pregnancy and has a stimulating action

on mammary gland functions which may be accentuated by androgen treatment.[353, 475] In the absence of fertilization these progestational changes abort and a new ovulatory phase begins The cyclic alternation in function between the two hormones in female mammals is reflected in recurrent periods of sexual receptivity. In the lower mammals mating is restricted to a preovulatory oestrus, but among higher forms there is greater variability in behaviour As in the case of the male, the hormonal basis of mating in the female has been studied by the administration of glandular extracts to spayed animals. Receptivity has been artificially induced in

Fig. 2. Relationship between the pituitary (hypophysis) and ovary in the regulation of the female sex rhythm. (*Courtesy of G W Corner, The Hormones in Human Reproduction, Princeton. University Press, 1942, p. 143*)

the monkey, dog, cat, sheep, and certain rodents by the injection of estrogens alone.[14] Experiments on the guinea-pig and the rat, however, have established the endocrine basis as a delicate balance between the two female sex hormones. Estrogen accomplishes the preliminary priming, but a complete and stable oestrous reaction demands progesterone.[66, 171]

The regulation of the female sex rhythm is the result of reciprocal pituitary-ovarian relationships illustrated in Fig. 2.[153, p 143] There is evidence to indicate that there are really two separate ovary-stimulating pituitary hormones. The first induces the follicle to secrete oestrogen (oestrin) and is checked by it Thereupon the second stimulates the *corpus luteum* to secrete progesterone. There is a possibility that the

thyroid is also involved in the pattern of changes periodically sensitizing the ovaries to gonadotrophic hormones.[293, 433, 613]

The Adrenals. As indicated in Fig. 1, the adrenal cortex is a rich source of sex hormones Oestrogen and progesterone, as well as the androgen, *adrenosterone*, have been isolated from this structure[501] Until adolescence, the development of secondary sex characters is regulated by an adreno-pituitary interchange. After the climacteric, hormonal stabilization is accomplished through increased output of adrenal sex hormones Thus the ovario-pituitary relationship during the reproductive period is superimposed on this primordial adrenal mechanism.[516] The adrenal cortex even contains a mammary gland stimulator, *cortilactin*[627] The vital metabolic and emergency functions of the adrenals are better known than their reproductive hormones. The varied repertory of these little glands has given them a place second only to the pituitary in the endocrine system. At one time they may have served as a primitive centre for the autonomic processes In line with the evolutionary trend toward emphasis on the head end, the control for such functions would have shifted forward and was presumably taken over by the pituitary and neural centres in the brain stem. According to this notion the adrenals would remain a subsidiary lower-centre control.

Other Glands. We have confined our discussion to those glands which directly affect reproductive function. Other endocrines, notably the thyroid and parathyroids, have important, though less direct, bearings on reproduction We have already suggested ovarian sensitization to gonadotrophic secretion through the *thyroid* Clinical material showing frequent thyroid involvement accompanying the sexual crises of puberty, pregnancy, and menopause bears witness to the relationship between thyroid and gonadal activities.[121]

The *parathyroids* consist of four small glands buried in the tissue of the thyroid. They control the calcium and phosphorus metabolism important for the maintenance of normal tone in muscle and nerve Lowered blood calcium results in increased nervous and muscular tension. Temporary disturbances of

this sort frequently accompany reproductive activity because of the unusual demands made at this time upon the calcium reserves for forming eggs and developing fetuses Premenstrual tension and the emotional disturbances of pregnancy and the menopause are partly accounted for on this basis.[121]

The *thymus* or so-called 'gland of childhood' was at one time considered opposed to the pituitary-gonadal functions, since thymic involution seemed to be prerequisite to pubertal development Although there is some experimental confirmation for this theory, the evidence is not altogether unequivocal, and the possibility remains that the thymus may have a lymphatic rather than an endocrine function.[436]

Finally a word about the *pineal* 'gland' is in order, since sexual effects, among others, have been attributed to this tiny mysterious outgrowth from the brain. Today the endocrine status of the pineal body, however, is hardly more tenable than Descartes's claim that it represented the place where the soul could act upon the body. Present information suggests that it may be merely a curious vestigial structure without glandular function [121, 436]

Our survey of the endocrines chiefly involved in reproductive behaviour reveals a system of chemical controls regulating all the basic activities of living If we may regard spontaneous activity as an expression of vitality or energy level, the importance of the endocrines is easily demonstrated. In the work of Richter[497] and others removal of the anterior pituitary, the thyroid, adrenals, and gonads from different groups of rats was followed in each case by a sharp drop in drum running The sequel appeared in the restoration of such behavioural deficiencies through glandular replacement The fact that thymus and pineal removal failed to exert similar effects on activity level supplements the negative evidence regarding their endocrine nature.[690]

NERVOUS MECHANISMS

We have already noted that the chemical controls interact with the central nervous system. We found them capable of activating certain neural mechanisms that underlie specific

behaviour patterns In turn, external stimuli are able to modify though not control internal rhythms Correlations between sexual periodicity and seasonal reversals in rutting behaviour have been reported in some animals following transference from the Northern to the Southern Hemisphere [107] Similarly, light has been found to shift both migratory and sexual cycles [92, 172, 283] The question that immediately confronts us concerns the way in which neural and humoral factors co-operate in the induction of behaviour To begin with the hormones, there are two possibilities: they may act directly on neural centres or they may affect them indirectly through reflection from visceral organs which they have activated. According to the first alternative, the sexual impulse would arise as a result of direct action of androgens or oestrogens upon some central nervous mechanism; according to the second, male sex behaviour might depend upon the distention of the reservoirs for semen, female, on uterine congestion. In the latter cases, the changes in sex organs would have been brought about by local action of the hormone. Analogous considerations would make the induction of maternal behaviour involve the pressure of milk in the mammary ducts Although the peripheral theory has enjoyed the greater popularity among psychologists, a careful sifting of the scientific evidence reveals stronger support for the central theory. Mating responses may be induced after complete removal of the reproductive tract, and care of the young in the absence of lactation [543] The heat reaction of a guinea-pig was induced by ovarian hormones after excision of uterus, ovaries, tubes, and vagina [473] Reproductive behaviour in the cases cited is under the management of central mechanisms which are directly activated by the hormones involved As in the case of the emotions, the peripheral organs seem to be cast in a supporting rather than a stellar role.

As for the mechanism by which external stimuli exert their influence on internal rhythms, the hypothalamus has been suggested as the brain-stem centre that directly activates the pituitary through which widespread changes in the endocrine system may be effected [630]

The most important question still remains as to what centres perform the necessary function of integrating the reproductive behaviour patterns. According to Beach, it is the forebrain that serves as co-ordinator throughout the vertebrates, although discrete parts of the reproductive pattern are controlled by lower centres.[56] He proposes that the forebrain contains a *central excitatory mechanism* which contributes to sexual excitability by lowering the thresholds of motor response to appropriate sensory stimulation.[54]

As the forebrain develops in size and complexity, its role becomes increasingly conspicuous. Below the mammals, mating seems to depend more on single types of sensory stimulation as well as on fixed forms of motor response. Thus in fish, frog, lizard, and pigeon, mating behaviour is largely dependent on vision. For example, 'the blind male pigeon may court the female but is unable to copulate effectively. The female pigeon's ovulatory cycle is initiated exclusively by visual cues.'[56, p. 218] As we shall see, analogous observations have been made on the jewel fish. Among mammals sexual excitement apparently does not arise from a single modality but normally represents a summation of various kinds of stimulation This increased complexity of sensory patterns is based on the development of association areas in the cerebral cortex. These centres not only integrate incoming impulses from various receptors but are also responsible for organizing the effective serial response that follows Without them, isolated parts of the instinctive pattern may be mechanically executed, but the cortex is essential for integrating them into a biologically effective whole. In the rat[71, p. 434] destruction of cortical centres was found to result in impairment of maternal behaviour roughly proportional to the extent of the injury. In this form, extensive cortical lesions may leave the female able to carry out her maternal duties in a stereotyped fashion and at the same time render her incapable of modifying her responses to sudden environmental changes.[71, 72] Obviously her learning ability suffered from the brain injury. In this connexion it is worthy of note that female rats scoring above average in maternal behaviour were also found to rank above average in

maze learning.[67] The cortex is also essential in mating Without it, the male pattern cannot appear because it is responsible for the active exploration, stimulation, and pursuit of the sexual object. The response sequence, however, is not dependent on the cortex [60] In the case of the female which plays a more passive role, the cortex is not essential to mating behaviour in an oestrous rat. It is necessary, however, for soliciting attention from the male and for integrating the discrete responses into a smooth and biologically effective pattern [61, 62]

THE ROLE OF EXPERIENCE

As the ability to profit by experience improves, mechanical inherited forms of behaviour gradually give way to more flexible, more readily modifiable modes of response. Adjustment and personality types become increasingly independent of structure and more amenable to social influences By the time we reach the primates, the complete mating or parental pattern is not inherited but must be filled out through individual experience. Indeed experience becomes so important that instinctual components are obscured. In mating, for example, it is often quite impossible to distinguish between behaviour springing from tissue need and externalized forms of the same behaviour originating from the exigencies of the social situation. Two manifestations of sexual behaviour, which are superficially alike, may be differently motivated – one may represent the biological drive; the other submission to a more powerful individual.[540] At the human level so far has the balance shifted from internal to social determinants of behaviour that a false dichotomy has sometimes been suggested between men and lower animals. This is misleading since the distinction is merely one of degree We shall amply demonstrate in the following chapters that the study of sex in animal society throws much light on human sex relations.

CHAPTER 3

Sex and Social Organization from Fish to Mammal

REPRODUCTIVE behaviour bears an important relationship to social organization throughout the evolutionary scale. It has even been suggested that primitive forms of mass relationship may have had a hand in shaping sex itself.[6] Once started, sex became one of the integrating factors in further social development [313] It resulted in the family, the dynamic unit of society as we know it In the course of evolution the increasing dependence of offspring on parents has been accompanied by a corresponding increase in the social control of individual conduct.

In the following pages we shall attempt to trace the development of sex relationships against the background of social organization from the lower to the higher organisms We shall select our illustrations from the vertebrate series because similarity of basic mechanisms lends significance to intercomparison From fish to man we find a universal tendency for the members of the various classes to arrange themselves in social hierarchies [158] In the lower forms social prestige is probably determined to a large extent by physical strength; in the higher forms a greater part is played by social factors The dominance status of the individual in his group determines his opportunity to satisfy the basic drives involving preservation of individual and species, thus serving as an important agent of natural selection. It ensures survival of the fittest in the struggle for food as well as victory to the strongest males in the competition for females. In many nest-building vertebrates males fight to secure and maintain territories necessary for mating and brooding Moreover, in those forms which enlist the co-operation of both parents in the duties of incubating eggs and rearing young, elaborate patterns of courtship appear, containing elements of both territory defence

site and to defend the surrounding territory depends on dominance. As in the swordtail, the resident male has the advantage over a stranger. A dominant male, placed in a new tank, usually becomes subordinate to the territory-guarding resident male. If the newcomer had been courting in his own tank, however, he might succeed in taking the resident's potential mate away from him.[450]

Size is an important medium through which dominance may be expressed When two males, both of which hold territory, are placed in a new tank with a ripe female, the larger male usually dominates. Noble and Curtis describe an instance in which two such males locked jaws and struggled. Within two minutes the larger had driven the smaller to the far end of the tank The female mouthed the large one gently and ultimately became his mate, after joining forces with him in attacking the smaller male.

Colour also plays a part in dominance as well as in breeding. Conspicuous nuptial colours in fishes and higher vertebrates serve to intimidate rival males and drive them away from the territory. The defence of a nest site involves the reddening of the ventral surface, raising dorsal and pectoral fins, and at the same time lifting the gill covers to reveal the red 'eyes' beneath. In response, a rival male either returns the display or quickly escapes.[446] Colour, however, must be backed up by threatening gestures to be effective. Artificially staining a subordinate fish red will not make him dominant over his rival because his behaviour does not change. Although the vivid colouring may attract the female's attention, in itself it is not sufficient to hold her. The colour is important in accentuating the appropriate movements that are necessary for the formation of nuptial bonds between mates Upon a female's arrival on his territory, the male courts her with gesturing symbolic of nest building. These ceremonies ensure recognition between mates and also seem to facilitate the female's progress from one stage of the mating cycle to the next. This is presumably a case of stimulation of the pituitary through central nervous connexions which we described in the preceding chapter. As we shall see in higher organisms,

especially birds, the nuptial bonds aid in the proper timing and integration of the respective breeding activities of the partners. After cleaning the nest site, laying takes place, the male synchronizing with the female by dragging his genital tube over the egg mass at frequent intervals The eggs are guarded by the parents alternately, one or the other assuming most of the duties. During this time, the eggs are fanned by the parent remaining on guard.

After the stickleback male, another well-known nest builder, has prepared the nests, he invites the female to lay eggs in them. When ready to lay, she displays a characteristic behaviour pattern which includes swimming toward the male, holding her body in a semivertical position, and pointing her head upward. These movements serve as a signal to the courting male. The female apparently prefers to follow red males exhibiting a special kind of movement. After the female has deposited her eggs, the male, stimulated by the characteristic odour of unfertilized eggs, inseminates them. He then drives the females as well as other intruders away and remains on guard for days. Victory in fighting in this form does not seem to depend directly on the strength of the male but rather on the possession of a nest and eggs.[345, 615, 674]

DEWLAP DISPLAY IN THE LIFE OF LIZARDS

Dewlap Display and Dominance The reptiles may be represented by the familiar American chameleon, a small green lizard whose reproductive repertory has been observed in field and laboratory. This form is of interest because of the development of a special behaviour pattern, the dewlap display, used in both courtship and fighting.[192, 449] Nowhere do we find more beautifully illustrated the relationship between dominance and mating than in this special form of behaviour. The dewlap is a fan of skin which is protruded beneath the lower jaw. Its red colour attracts the attention of mate or rival. During the breeding season males, and under certain circumstances females, will fight to defend the territories into which they have migrated. In a Cuban field study of one species, Evans [194] mapped out the territories of 47 males and 8 females,

by placing a test specimen somewhere within the area and observing attack by the resident. He found that an individual or a mated pair dwell upon a particular territory which averages 400 square feet and contains a lookout in the form of a tree or post. If a strange lizard is placed upon the resident's post, a duel ensues, which Evans[193, pp. 217-18] describes·

The urge to acquire and to hold territory against other males is very marked. The resident male, upon the approach of a strange male, will extend a dewlap or fan lying in the mid-ventral line beneath the lower jaw (Reflex 1). This is a challenge or warning to the stranger. If the latter does not reply to this challenge, no fighting is apt to occur although the resident male may persist in his challenging display for some minutes. If the non-resident also flourishes his dewlap, then the dorsal crest along the neck of each male rises slowly to a height of perhaps 4 mm. (Reflex 2) and they begin a sidewise approach toward each other (Reflex 3) while they flatten their sides to such an extent that the belly drags on the ground (Reflex 4). When they are within 6 inches of each other, they continue to strut back and forth with dewlap flashing and body flattened. Many encounters end at this point The male that is most impressed with the display of the other moves off lowering his crest and withdrawing his dewlap, his body no longer flattened. In other words, these four reflexes combine to produce an intimidating or bluffing effect often making it unnecessary to go farther to defeat a rival.

However, if neither male is bluffed by this mutual display, their movements become swifter, they move closer, and opening their mouths wide each strives by means of swift snaps of the jaws to catch the snout of the other (Reflex 5). At last, the defeated male beats a hasty retreat (Reflex 6) while the victor pursues him for a short distance (Reflex 7) and then returns to a vantage point overlooking his territory and flashes his dewlap repeatedly (Reflex 8). The defeated male is not molested further unless he approaches the victor In this case a flash of the dewlap is sufficient to send the victim into hiding again

The relation between territory defence and dominance was revealed by an experiment in which 19 males were placed together in one cage and their relative dominance determined on the basis of a succession of spontaneous encounters It was significant that 90 out of 98 face-to-face combats were won by the resident male, even though the stranger had dominated his

social interactions centre around dewlap display which forms the basis of defence, mating, and family structure.

SEX IN BIRD SOCIETIES

Avian Social Orders. The experimental approach to avian social orders was ushered in by Schjelderup-Ebbe's famous studies which included such diverse forms as the domestic hen, jackdaw, parrot, heron, and others.[526] On the basis of his observations he originated the concept of social dominance. Among all the groups studied he found what he believed to be regular peck orders based on dominance-subordination relationships established between pairs of birds after an initial encounter. Carried away by his own enthusiasm he went so far as to describe the bird's feelings in the matter: 'The face of the despot would radiate with joy of satisfied pecking lust and the fury could clearly be observed in its eyes.' Whether the dominant bird is stirred by these human emotions, no one will ever know. We cannot follow Schjelderup-Ebbe into the realm of his colourful imagination but shall have to be satisfied with his more prosaic observation that social dominance was expressed through pecking, raised feathers, and throat sounds

Dominance seemed to reflect general physical vigour Weakness resulting from weariness, illness, or senility resulted in a lowering of status. The role of the sex hormones was suggested by the dependence of dominance upon age and sex Schjelderup-Ebbe observed that young birds showed no despotism until about 20 to 30 days after hatching. Since dominance behaviour emerged at about the same age even in cases where little ones had not observed despotism among their elders, there is a strong probability that sexual maturing is the determining factor. Moreover, young males in whom the sex instinct began earlier usually dominated young females, although in adults there was no general rule concerning sex dominance. In some species the males tyrannized over the females, while in others it was the female that henpecked the male. In Schjelderup-Ebbe's opinion female despotism is biologically undesirable inasmuch as it interferes with pairing and thus militates against increasing the species.

With respect to domestic poultry, later work has in general supported Schjelderup-Ebbe's findings. Allee found a most regular social hierarchy in White Leghorn hens[3, 4] In his opinion, experience as well as hormones plays a part in determining an individual's social status. He points out that group organization among birds depends on their ability to recognize flock mates as individuals. As far as sex differences are concerned, it is the more showy, the larger, or the stronger sex that is dominant. This accounts for the fact that in most species of birds males dominate females. The importance of dominance in the breeding activities of poultry is shown by the fact that those high in the social order lead the freest lives and thus have the best opportunities for becoming parents. This means greater freedom for copulation on the part of cocks, coupled with greater egg production for the less molested high-ranking hens. Allee cites confirming evidence reported on the sage grouse of Wyoming in which fewer than 3 per cent of the cocks made 87 per cent of the matings. Such data indicate how social position in the flock determines the contribution a given individual is able to make to posterity.

Dominance Status and Breeding Behaviour. In an ingenious attempt to discover social laws by an investigation of the elements involved, Murchison[431, 432] reduced social interaction in the barnyard to three 'social reflexes', involving approach, fighting, and mating behaviour. These were all carefully quantified and the relationships plotted. The results supply further evidence of a correlation between social dominance and copulatory behaviour in the male, and between social dominance and 'sex appeal' in the female.

Reproductive behaviour in relation to general social organization has been investigated in many other birds. Jackdaws assume social ranks according to the order in which they become sexually aroused and mated.[222] The social status of a female of this species may be elevated by pairing with a male of superior rank.[447] In parakeets, a shift in dominance status occurs during the breeding or nesting period. At that time males assume dominance over females although in other seasons even low-ranking females dominate high-ranking

depend on practice. Further evidence of the importance of experience is the dove's adaptability to changes introduced into the usual nesting procedure These reputedly monogamous birds are easily induced to take a second mate if given the opportunity. They will then vary their normal routine to the extent of building two nests, incubating two sets of eggs at the same time and raising two sets of young.[197] We have to attribute the dove's fidelity under normal conditions to his limited opportunity.

No bird has contributed more to our understanding of breeding behaviour and its relation to other aspects of social life than the black-crowned night heron [460] In this species a dominance hierarchy is in evidence only in fledgelings before pairing has occurred, or under abnormal conditions of crowding. The peck order is important in regulating the formation of pairs, in which one bird dominates the other. Pair formation is usually initiated by the male which occupies a perch near an old nest and attracts the female with a special song and dance.[16] The dominance is expressed by the higher head position in billing Upon failure of a subordinate bird to lower its head; the gentle billing gives way to more aggressive thrusts and finally to the extreme territory defence movements. The feeding responses of the young in which the older nestlings vie for the privilege of stroking the parent's beak suggest a genetic account of peck dominance in this form.[460] According to this notion, each bird attempts to keep its head highest in the struggle, the most successful maintaining the highest position. The effective gesture is presumably carried over to later life and used as a means of social and sexual control.

Dominance originating in relation to food becomes a sexual symbol in the case of food begging in the laughing gull. During this ceremony in which sexually active pairs indulge, the female is severely pecked if she raises her head higher than that of the male. By this technique, the subordinate posture in the female, which is an absolute necessity for coitus, is achieved.[459] These adjustments reflect a delicate balance between internal and external factors. Androgens injected into

castrates will induce breeding calls and postures characteristic of male mating behaviour, and oestrogens will stimulate them to respond to the male sex call and to food begging with lowered head Pairing up, however, does not automatically follow treatment with male hormone but occurs only in response to the female behaviour pattern which in turn may be induced by female hormones.[457]

Dominance and Sexual Hormones. The many indications of the importance of sex hormones in dominance status have led to a number of attempts to change the dominance level experimentally by gonadal injections In hens, the administration of male hormone to those of low rank produced a rise in social status to the extent that in each flock an injected bird eventually occupied the top position.[9, 11] That this is a specifically androgen effect is suggested by the negative results obtained by the administration of oestrogen,[8] thyroxin,[10] and an adrenalin preparation.[7] Unfortunately we do not know to what extent the changes represent direct effects of the hormone and to what extent they may have been indirectly brought about through the impressive effect of the enlarged comb and the behavioural changes following prolonged treatment. The case of BY cited by Allee illustrates the interaction between hormonal and experiential factors After 7 weeks of daily androgen injection, she stood highest in her flock where she had previously held lowest rank. In addition to the great increase in comb size and other head furnishings, her whole stance had changed: she was more erect and cocky, crowed repeatedly, and three times went through somewhat abbreviated male courtship pattern After the effect of the androgen had worn off, the hen resumed her habit of losing contests with others but continued to hold her position as top-ranking bird in her own group She had apparently retained her prestige for a while owing to social lag. A succession of defeats, however, finally lowered her status [5] In this connexion we are reminded of the hen reported to exhibit male treading behaviour after androgen treatment.[698]

Similar experimental modification of the social hierarchy has been induced in the ringdove which resembles the pigeon

in pecking organization. Androgenic treatment of a subordinate bird of either sex improved its social status and increased its vigour and effectiveness in combat, leading to a more stable type of social hierarchy. In hitherto passive females, male characteristics appeared in a progressive series. In view of the fact that recognition between individuals in this species is based on colour or contour peculiarities, it seems probable again, as in the case of hens, that the higher dominance status is accounted for in part by the changes in physical appearance due to the hormone, as well as by the changed behaviour.[83, 84]

The canary has recently attracted the attention of research workers in this field. Normally the males fight more than the females and show unquestioned dominance over them. At the height of the breeding season, however, both sexes become more aggressive, the laying females dominating their mates and assuming the male functions of singing, fighting, and masculine mating behaviour. The failure of oestrogen injections to induce such changes in the behaviour of spayed and normal immature females strongly suggests androgenic substances secreted by the normal female as the determining factors.[554] This hypothesis was borne out by the results of male hormone administration to low-ranking females. In a flock of six, after a 32-day series of injections, the experimental animals occupied the top three instead of the bottom three positions. Moreover, they displayed parts of the male courtship pattern although no actual copulation or nest building occurred.[553] In other experiments, singing was induced in females by androgen treatment.[34, 359]

The herring gull affords an impressive example of the importance of hormonal controls in dominance behaviour.[100] Boss reports that androgen injections in juvenile birds and castrates induced premature aggressiveness, interest in territory defence, and nest building. The treated males were the most aggressive birds in the colony. When several males were placed in the same cage, a fight resulted and continued intermittently until one assumed leadership of the cage. When the hormonal concentration of the leader was reduced, he gradually lost control of the cage to one of the other treated birds.

In many instances it was found necessary to remove the displaced leader because he refused food, stood alone in the corner, and seldom joined in any of the activities and calls of the colony. If placed in a cage with controls or with oestrogen-treated birds where he quickly assumed leadership, he regained his appetite and interest. In the case of females, it was noted that those receiving high concentrations of male hormone dominated females on lower dosage and controls of either sex, but that they never dominated males receiving much lower concentrations.

Dominance and Territory. Dominance status determines how large a territory a bird may possess. The acquisition of territory often represents as severe and formalized a struggle as we have seen in the lizard. Among many birds, the virile male makes himself conspicuous by colour or sound and threatens all male intruders and females whose sexual phase does not synchronize with his own For example, in the song sparrow the battle for territory occurs in four stages: the invader appears and, singing constantly, stakes his claim. The defender gives chase which culminates in a decisive fight on the ground. Finally, each bird proclaims ownership of his own territory.[440] Another effective defence is expressed in the herring gull. His folded wings are raised as he struts out to meet the audacious newcomer On his way, he picks up pieces of moss, twigs, or grass and throws them to one side or the other. A fight ensues in which one bird clamps his bill over the other's and tries to wrestle him to the ground where he can get a better hold on his opponent's throat. All the while, the struggle is accompanied by a deep, doglike growl [100] As we have already discovered in lower forms, territories are frequently associated with reproduction. In nest-building animals, territory is important for the smooth execution of courtship and brooding activities. It also serves the useful function of ensuring and safeguarding an adequate supply of food for the young [616]

External Regulation of Reproduction. Although internal factors play an important role in dominance and mating behaviour of birds, the contribution of the external situation

should not be underestimated. The co-operation of both parents of many species in brooding and in the care of young demands that the parents remain together during the mating season As we have noted in fish, the formation of these nuptial bonds is ensured by the colourful courtship ceremonies which make their appeal through the external sense organs. Frequently the courtship represents a rather stereotyped symbol of the nest building that is to follow. An illustration is a ceremony in the black-crowned night heron which involves a formalized manipulation of sticks by the male The male, standing over a crude nest platform or at a distance from it, holds a stick in its bill and loudly snaps its bill on it while moving its head rhythmically up and down. It is significant that by treating a female with male hormone it is possible to increase her interest in twigs until the full male pattern emerges [455, 458]

The elaborate ceremonies characterizing bird life indicate the importance of regulation by auditory and visual cues. In the same species of heron again, the voice is the essential factor in initiating and synchronizing gesturing while the pairs are held together primarily by visual stimulation [460] Mounted specimens of females have elicited appropriate male courting reactions in a variety of species.[454] Moreover, vision plays a large role in the recognition of the sex partner Under normal conditions the heron can recognize its mate after a separation of 20 days or more, but if the colour pattern of the head has been modified by artificial refeathering, as small an interval as 6 days will result in failure

Among birds in which audition is of paramount importance in social life, we have already referred to the song sparrow The house wren affords another excellent illustration.[324] Three types of song have been distinguished: The territory song serves to notify other males that the area is occupied and to advertise the singer's presence to the females so that they may be enticed into his territory Next, the mating song expresses great sexual excitement and seems to stimulate the female to copulation Finally, the nesting song apparently reminds other birds that the territory is occupied and aids in

depends on relative dominance, and individuals of a pair may vary from day to day in mutual social status. The essential difference in the behaviour of the sexes is that during the breeding season a male always tries to dominate weaker birds while an oestrous female temporarily loses this urge.

Courtship ceremonies involve sexual posturing which supplies the external stimulation necessary to effect a synchronization between the sexual processes of the male and female. During early stages of the breeding cycle, one bird will bring a pebble to the nest and lay it at the feet of its mate This ceremony is followed by mutual bowing and hissing. The other bird devotes itself to arranging the nest material. Thus

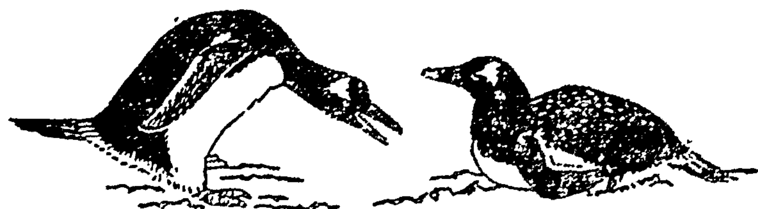


FIG 3 Penguin announcing his presence by bowing to his mate. (*Courtesy of B. Roberts, The breeding behaviour of penguins, Brit. Museum, Sci Reports, Brit. Graham Land Expedition, 1934–1937, p. 253*)

the labour of nest construction is divided between mates. Brooding is also shared, although as in the tern the female spends more time on the nest than the male. During this phase the threshold to aggressive behaviour is very low and every penguin, except the mate, that comes within the territory of a nesting bird is attacked As shown in Fig. 3, the mate announces his presence by bowing to the one sitting on the nest [509, p. 253] The importance of appropriate gestures was suggested in the case of a stuffed specimen which was attacked as if it were an impostor. The internal state apparently predisposes the individual toward aggressive behaviour and at the same time sensitizes it to certain types of external stimulation. Out of breeding season no fighting occurs

We find that the display and adornment in birds as in lower organisms probably aid in inducing ovulation and

related processes at the most appropriate time.[32] External factors involving the social group have also been found to affect the sexual behaviour of birds. The most extensive work along this line has been done on cocks. Changing the number of available hens was reflected in corresponding changes in frequency of copulation; the more hens the more sexual activity, and vice versa Surfeiting a cock with the same hens decreased his sexual appetite, while introducing new partners stimulated it. Even the ingrained daily rhythm gave way to new habits [560] General social status determined by experience is also reflected in the sexual sphere. In the ruffed goose, for instance, a bird that has been cowed by another may never come into the mating phase at all.[12] In the light of the evidence, we may conclude that although reproductive activities below the mammals seem to be primarily dependent upon internal mechanisms, they are subject to regulation and change by external influences.

CONCLUSION

Our survey of the lower vertebrates shows mating to be inextricably bound up with dominance behaviour in the pattern of social life Their common core seems to be principally the

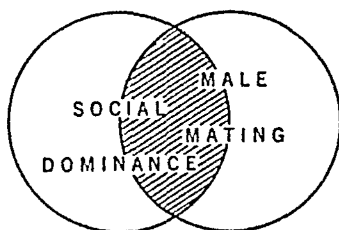


FIG. 4 Suggested relationship between social dominance and male mating behaviour.

male sex hormone, which simultaneously induces social and sexual dominance. The female sex hormones, on the other hand, are more restricted to reproductive activities and may even exert an inhibitory effect on dominance. In addition to the male hormone and other internal factors, certain external

influences directly affecting the sense organs or operating on the basis of habit independently contribute to each pattern.

The relationship suggested between social dominance and male mating behaviour may be represented by Fig. 4. The shaded portion indicates those aspects of each pattern that can be attributed to androgen and supporting hormones; the clear areas signify behaviour in each case due to non-hormonal external factors which are independent of each other

As for family life, we may trace its crude beginnings in the primitive brooding activities of the lowest vertebrates. There is little, however, that should be dignified by the title of parental care until we come to the birds. At this level, parental care varies according to the need of the offspring, and in any case is ephemeral As soon as the young have become independent, the attitude of the parents toward them changes from solicitude to hostility For the more enduring primary group relationships for which we customarily reserve the term 'family' we shall have to turn to the mammals

CHAPTER 4

Sexual Behaviour in Rodents

SEX AND SOCIAL RELATIONS

Beginnings of Family Life. When we reach the mammals, the scene changes. The increased ability to learn from experience makes for greater variability of behaviour. It also makes for a prolonged infancy. Although the individual depends less upon ready-made innate modes of adjustment, he depends more upon other individuals in his immediate circle for the satisfaction of his needs. Special maternal mechanisms are evolved to nurture him through the precarious period of extended infancy. With few exceptions the young are carried within the mother's body for varying gestation periods. After birth they suckle milk from her teats and nestle warm and safe near her large soft body. Even after they no longer depend upon her for the basic necessities of life, there remains a residual social dependence which increases the time of maternal effectiveness. The close relationship between mother and offspring becomes the nucleus of the increasingly permanent relationships of family life upon which the more general social structure rests.

Among the mammals we may distinguish different levels. In the lower forms the various patterns of motivation are largely instinctive, specific, and independent of one another. As we proceed to higher levels, they become more widely generalized and interrelated as a result of externalization. Behaviour appropriate to one drive may be used in the service of another. In the highest forms a given behaviour can be interpreted only in the light of the total situation in which it occurs. In mammals, most of the experimental work has centred around the rodent and the primate. Fortunately these groups represent the lower and higher ends of the mammalian class. In the interests of clarity and scientific reli-

ability we shall confine our material to these groups at the sacrifice of many interesting observations on intermediate forms.

Sex and Dominance. Our knowledge of the lower mammals is derived largely from experimental studies of the rodent The vast bulk of this literature deals with mating and maternal patterns but without reference to the general social order. Uhrich,[629] however, has attempted to work out for the mouse what others have done for lower vertebrates He studied social organization in several hundred animals of both sexes. Working with numerous small groups, he found wide variation in type of organization manifested, varying from those dominated by a single individual to those in which no fighting appeared at all. In the most frequently occurring form a single male enjoyed exclusive dominance. Age and weight showed little correlation with social dominance in adult groups, but castration exerted an inhibitory effect. Fighting in the rat as in the lower organisms bore a close relationship to maleness Fights between females were rare provided that the animals had been together for several days, but they did occur in cases where females were newly combined in the same pen Like the territory defence below the mammals, the home cage predisposed toward fighting success in the rat. Although many of the aspects of social organization which this interesting study reveals at the rodent level have made a prior appearance in the phylogenetic scale, they now play a less conspicuous part and are no longer so essential for reproduction.

Unfortunately there are no other experiments on the relationship between sexual behaviour and dominance status in the rodent Some interesting observations bearing on this point, however, were brought out in a study of the brown rat.[422] When the rats were placed together, the males immediately assumed an aggressive attitude, fighting all that opposed them The females soon yielded to the males, lying passively on their backs and permitting the males to nose them, as if to express their recognition of male superiority. That dominance exerted some effect on mating was suggested by the fact that

fecal boluses excreted.[26] The author attributes this change to the physiological condition of oestrus.[27] A direct comparison of males and females by means of timidity tests reveals less timidity on the part of the females Early removal of sex glands does not alter this relationship.[22]

DEVELOPMENT OF SEXUAL BEHAVIOUR

Obviously there is insufficient material available on social organization in the rodent to provide us with a frame of reference against which to view reproductive activities. Compensation for this lack, however, may be found in the wealth of studies dealing specifically with mating and maternal functions In the light of this illuminating literature we may trace the origin and development of these behaviour patterns and in that way determine to what extent such behaviour is subject to socialization.

The Awakening of Sexual Drive. In the white rat, copulation in males[590] and receptivity in females[592] appear at about 50 days. Even when kept in isolation from the time of weaning, the young males show surprising facility in their initial copulations [57, 591] Marked individual differences in sexual excitability have been detected in the rat as in males of every species. If very excitable, they may attempt to copulate with non-receptive females and even show sexual excitement in the presence of young guinea-pigs of their own size [591] Less excitable males, on the other hand, require the biologically adequate receptive female to arouse them sexually and, if they are very sluggish, may not respond even to her.[55] The overt copulatory pattern is thus a product of the male's internal state and the intensity of the external stimulation. Consequently, excitability may be increased either by lowering the threshold of the central excitatory mechanism by androgens,[56, 63] or by increasing the intensity of the external stimulation through experience. After experience, sexual behaviour may continue even in the absence of sense organs that normally play an important part in such activity [54] Since ability to profit by experience depends upon the cerebral cortex, these results are easily understood Cortical injuries interfered

less with the motor pattern than with the animal's ability to recognize the adequate stimulus [59, 60]

As for receptive females reared in isolation, the initial mating response is immediate, indicating that like the motor pattern in the male it emerges without training. Moreover, the ages at which the first heat occurs closely correspond with those of normal animals reared with males [589]

The development picture we have drawn of the rat finds its parallel in that other faithful laboratory rodent, the guinea-pig. Puberty begins at about the same age in males and females, in this species between the thirtieth and fortieth days.[33] As in the rat, physical maturation is more important for the emergence of mating patterns than association with animals of the opposite sex [373] One might at least expect the male to learn through experience to select suitable recipients for his attentions. It is doubtful, however, whether even the most experienced adults ever become very proficient in discriminating between receptive and non-receptive females. Their courting technique is always largely trial and error.

Adult Mating Patterns: The Male. With maturity a complicated mating syndrome appears, in which the male plays the more active part. In the rat, there occur pursuit and mounting, palpation of the female's sides, and pelvic movements which culminate in intromission. The same sequence characterizes the sexual advance of the male guinea-pig.[372, 546] Comparing such behaviour with mating in the lower vertebrates one can hardly fail to be impressed by the greater directness of the rodent. No colourful courtship ceremonies distinguish his love-making. Even the nibbling and smelling that frequently accompany sexual activity are not essential to its consummation With the development of gestation and suckling mechanisms, baby-tending no longer requires the co-operation of mother and father. Hence, there is no necessity for the formation of nuptial bonds or the courtship display on which they depend. When conditions are ripe, the rodent engages directly and without formality of any kind in the important activity of procreating his kind

Adult Mating Patterns the Female. As we shall see later on,

the female of the species plays a more passive role than her mate[546] As we have already noted, her sexual activity follows a cycle of internal changes with recurrent periods of receptivity or heat preceding ovulation. Finding a correlation between changes in the genital organs and changes in the types of cells present in the vagina, early workers[369, 582] introduced the vaginal smear as an index of oestrous phase. So great is the variability between smear picture and behaviour, however, that behavioural criteria have replaced the smear in studies of reproductive activities[282, 691] For the rat, Ball has developed a five-point scale of sexual excitability by means of which it is possible to grade oestrous responses.[35] In this species heat recurs on an average of 4·5 days and lasts several hours each time.[308, 369] While in this condition, the female becomes more active, darting about among the other animals or crouching in a characteristic posture. Frequently her ears quiver and, when mounted by a male, she arches her back so as to elevate the genital region

In the guinea-pig the oestrous cycle is nearly four times as long owing to prolonged action of progesterone.[693] Although it is normal for females to mount one another at the peak of oestrus, true copulation is a male prerogative, the female remaining passive, with rigid posture and elevated genitals.[546, 691] The oestrous reflex in both rat and guinea-pig is non-specific and, although normally elicited by the male, it readily occurs in response to any mechanical stimulus applied to the appropriate region When the female is not in heat, needless to say, no stimulation, male or otherwise, can elicit the sexual response.

GLANDS REGULATING RODENT SEXUAL BEHAVIOUR

The Male. Our survey of mating among rodents reveals that, for the most part, sexual behaviour is determined by internal changes In the male, the predominance of endocrines is apparent from the perfection of the initial performance at puberty as well as from the induction of precocious puberty

by male hormone injections.[588] Moreover, the gradual decline of sexual vigour after castration also emphasizes the importance of internal regulators. The same downward trend has been found in rat,[594] rabbit,[593] and guinea-pig.[542] Nothing can stay its inexorable course except the administration of androgens. In this way alone can sexual impotence resulting from castration,[426, 548, 570, 586] or other causes[585] be overcome. The weight of such evidence lays great stress upon hormonal factors in the sexual life of the rodent. As we have already pointed out, however, there is room for environmental influences in the selection of suitable sex objects Furthermore as we have noted, under conditions of sexual hyperexcitability, the external stimulus apparently determines the form of expression.

The Female. The female rodent seems to be even more dependent upon endocrine factors than the male The sudden onset of oestrus at puberty and the equal suddenness with which heat reactions drop out after removal of the gonads are evidence in this direction. Moreover, the fact that such spayed animals may be brought into artificial heat by ovarian extracts[36, 171] bears further witness to the importance of hormones in the female mating pattern. Moreover, the oestrous rhythm, though influenced by external factors, yields only superficially to them In the absence of light, cycles in the guinea-pig were found to proceed with the same regularity as before but without the usual nocturnal peak.[172] In the rat, a 12-hour shift in oestrus has been brought about by reversing light and dark conditions.[283] We have also achieved similar results with the guinea-pig to our great convenience in experimenting.[546] With the change in illumination in such cases there was an initial readjustment but no essential alteration in periodicity. Even when more radical changes in living conditions were introduced, involving disturbances in temperature, feeding and watering routine, and exercise, the greatest effect was a lengthening of the cycle in progress when the shift was made [98]

Summarizing the evidence at hand, we are led to the conclusion that the rodent mating pattern is more sensitive to

internal regulators than to fine changes in external stimulation. In this respect the rodent may seem more primitive than the lower vertebrates we have discussed. His lack of discrimination, however, may be attributed to his burrowing habits Spending much time underground, he is less dependent on eyes and ears than are birds, lizards, or even fishes. It does not mean that the rodent is less capable of profiting by experience. On the contrary, his more elaborately developed cortex would lead us to attribute greater learning capacity to this order. The role of learning in sex behaviour becomes increasingly important as we turn to higher forms.

MEASURING SEXUAL BEHAVIOUR

Spontaneous Activity It is comparatively easy to describe mating behaviour, extremely difficult to measure its strength. Among the ingenious methods that have been used are the revolving squirrel cages which record the animal's spontaneous activity. Applying this technique to groups of white rats, early investigators were able to establish a sex difference: not only was the average activity of the female greater than that of the male,[294] but it showed cyclic peaks coinciding with oestrus, which were absent in males and immature females [563, 640] In older females the interval between the peaks of activity was lengthened as menopause approached.[564, 566] Surgical removal of the gonads resulted in a striking drop in general activity,[301, 498] but in such cases cycles of activity could be artificially induced by estrogen injections.[112, 282] Even male castrates treated with either ovarian grafts [641] or extracts [499] showed increased activity which in many cases simulated the normal oestrous rhythm. Recent experiments[482] have successfully increased the activity level in spayed females by androgen injections In view of the lack of specificity of gonadal hormones which we have already noted this result is not surprising.

Though primarily dependent upon endocrine factors, spontaneous activity may also be influenced by the external situation. Male rats caged next to a female produced activity curves closely approaching that of the female even to the

approximately synchronous oestruslike peaks. The female activity rhythm, on the other hand, is apparently more deeply embedded in the organism and not susceptible to social facilitation because the presence of one female had no effect on the activity of her next-door neighbour.[564]

Obstruction Methods. Although drum running reflects sexual drive, it is only an indirect index. To measure the strength of drive, it is necessary to see if the subject will overcome an obstruction in order to reach a member of the opposite sex. For use in motivation studies of the white rat, a special box was devised by Warden and his co-workers at Columbia University.[642] A subject was made to undergo a shock by crossing an electrified grid before he was allowed contact with the incentive animal. Strength of sexual drive was measured by the number of crossings, contacts, and approaches to the grid within a given time interval. Using this technique, it was found that among females[643] the performance apparently depended upon oestrous phase As in the rotation wheel, animals in oestrus were more active in the obstruction box, crossing on the average more than ten times as often as those in any other condition. In contrast with the cyclic behaviour of the female, that of the male reached a peak 24 hours after sexual satisfaction and showed little change thereafter. Another interesting sex difference was that the female in heat crossed more often even when there was no male to entice her than would a non-oestrous female to a male incentive A male rat, at the height of sexual activity, on the other hand, would cross less often to an empty compartment than would a male at any other time to a receptive female. These findings suggested that sexual drive, like spontaneous activity, was more dependent on internal organic condition in the female; more susceptible to external stimuli in the male.

Further light is thrown on this difference by the fact that segregation with other females for as long as 35 days failed to decrease the drive of the female in oestrus, although after an equal amount of segregation there was a diminution in the male drive.[312]

As might be expected, impotent compared with potent

males showed a marked inferiority in obstruction-box performance.[597] In the same direction are losses in sexual drive following removal of the gonads Such deficiencies were overcome in females by injection of ovarian hormones, but replacement has been unsuccessfully attempted in the case of male rats.[444, 588]

Again the guinea-pig enriches our store of information concerning rodent behaviour. In our experimental studies of this form, we introduced a hurdle which the animal had to scale in order to reach the incentive. This type of barrier seemed well adapted to the guinea-pig. It was sufficiently outside of his usual repertory of responses to constitute a psychological as well as a physical hurdle, while at the same time it was not so startling as to freeze him. Using a device involving this form of obstruction, we compared groups of male and female guinea-pigs, under conditions of presumably maximum sexual tension In contrast with the rat, a definite sex difference in behaviour was revealed: males showing an active drive which apparently had no counterpart among the females.[546] This is all the more surprising in view of the very active homosexual mounting behaviour which has been reported for females at the peak of oestrus [692] and abundantly confirmed in our own observations. Whatever of an impulsive character there may be in the females' sexual needs, it is apparently not sufficiently intense to overcome a barrier easily hurdled by the sexually deprived male. The male, however, displays a strong and dependable drive to reach a female although he is reluctant to surmount the obstruction if the incentive chamber is empty.[538]

As in the male rat, castration was followed by a gradual decline in crossings accompanied by a reduction in attempts to copulate and in ejaculations. Although hormonal replacement failed in the rat, it was successfully accomplished in the guinea-pig [542]

Direct Measures. Sexual drive may be indirectly expressed in drum running or in overcoming obstructions in the way of a sex object. The question still remains as to how closely such behaviour correlates with sexual drive directly expressed in

mating. In a number of recent studies on male rats[23, 24, 596, 600] statistical relationships have been worked out for various measures of sexual behaviour Fair correlations have been obtained between copulatory scores and obstruction-box performance: considerably lower figures between copulatory scores and activity in rotation cages. The results at hand offer little ground for prediction from one measure to another. Among tests of copulatory behaviour, however, a respectably high degree of consistency exists[21, 589, 590] which may serve as a potency index in investigations of individual differences

For the female, corresponding individual consistency has been reported for the guinea-pig, in the duration and character of oestrus.[692] Although not worked out so fully for the rat, similar relationships presumably hold.[95]

Comparative Strength of Sexual Motivation. We have considered various aspects of sexual life among rodents. In closing, we may inquire as to where sex belongs in the rodent's system of values Since individual survival does not depend upon it, we should hardly expect it to rank ahead of hunger or thirst In an early experiment [626] in which male rats were offered a free choice between food and a receptive female, a preference for food over the female was expressed in 77 per cent of the cases. This ingenious free-choice method has recently been improved so as to permit a study of shifts in preference from trial to trial. Even with more potent males, the earlier findings were corroborated to the extent that most males chose food more often than the female. There were,

TABLE 1. *Percentage of Total Number of Subjects Making a Given Choice*

Trials	Food	Female
1–5	75 8	24 2
6–10	47 3	52 7

however, very wide individual variations in the number of each choice from animal to animal and from day to day. Moreover, during the ten trials within a given day, vacillating behaviour was common and the preference gradually shifted

from food to female, as indicated in Table 1 adapted from Stone and Ferguson.[598, p. 248] Although food dominated sex at the beginning of each day's trials, shifts would occur in the more potent rats after they had consumed a few grains of food. As in the well-known alternations of antagonistic reflexes, retinal rivalry, and the fluctuations of ambiguous figures, a conflict between strong biological drives is apparently resolved in a similar way.

The most ambitious attempt to work out a hierarchy of drives was based on the results of the obstruction box in the white rat. Table 2 summarizes the findings obtained under

TABLE 2. *Relative Strength of Drives*

Drive Tested	Average Number of Crossings
Maternal	22 4
Thirst	20·4
Hunger	18·2
Sex	13 8
Exploratory	6 0
No incentive	3 5

different conditions of motivation.[642, p. 26] We are at once surprised to find the maternal drive at the head of the list. We may, however, regard this result as somewhat spurious. As we shall see in our discussion of maternal behaviour, the mother was run to the litter in the home cage rather than to the litter alone. This actually provided a double incentive since she was motivated to get home as well as to reach her young. Consequently the results may indicate a summation effect, unduly elevating the maternal in the tabulated hierarchy.

On the basis of these results we may conclude that in comparison with the other drives, sex enjoys a secure though not primary place in the rodent's repertory of activities. It may be depended on to function without benefit of social training and yet may share with the exploratory drive a certain susceptibility to external influences which, though weak in the rodent, forecasts the important role society is to play in the mating activities of higher forms

opossum nests in the branches of trees, often inhabiting disused birds' nests. In the laboratory, the mother availed herself of strips of paper towelling which had been scattered about the observation cage She collected all the material presented, carrying it to the nest box either in her mouth or by grasping it with her prehensile tail.

Retrieving. The mother *Marmosa* expressed her maternal attitude by gathering her young about her and making sure that they were in a favourable position for sucking. Tests were made in which the young were detached from the female and scattered about the cage As soon as the mother was given access to them, she diligently set about retrieving them. After nosing the baby, her technique consisted in pushing it backward under her belly with snout and forepaws. In the course of an 11-minutes trial the mother had discovered all the scattered young and had reattached them to her body. In two other retrieving tests, two new-born rats which were larger than the young opossums were included with the latter. The mother's reactions to the strangers were indistinguishable from her responses to her own young, but since the rats failed to seize their foster-mother's coat, they could not be retrieved. As we shall presently see, the mother rat carries her babies with her teeth to the nest site

NEST BUILDING, RETRIEVING, AND SUCKLING IN RAT AND MOUSE

Nest Building The most extensive work on maternal behaviour in the lower mammals has been done on that most patient of all laboratory animals, the white rat Like many of the forms we have considered, the rat builds nests. Her nest construction is not limited, however, to housing the young but plays an important part in the regulation of temperature It appears in individuals of both sexes at various times throughout life In males it occurs irregularly under conditions of lowered temperature In normal females there are rhythmic variations which exactly reverse the drum-running cycle, the peak of specific nest building coinciding with the dioestrous

dip of general activity.[328] Moreover, during pregnancy and lactation, when general activity is at lowest ebb, nest building reaches its maximum, far exceeding the level attained at other times. The relationships are shown in Fig. 5. The accentuation of nesting in mothers occurs regardless of external temperature. The nesting responses are readily elicited for several weeks until the young begin to leave the nests. This behaviour is adaptable to gross alterations in the external situation. Nests are built more loosely when it is warm; they are transferred or reconstructed when air currents or heat is turned on them,

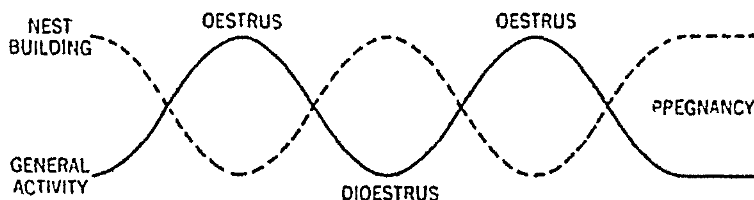


FIG. 5. Scheme indicating inverse cyclic variations of nest building and general activity in the white rat. (*Suggested by findings of E. F. Kinder, A study of the nest building activity of the albino rat, J. Exp. Zool., 1927, 47, 117–61.*)

and the expression of preferences for certain materials can be elicited in an experimental choice situation Under normal circumstances, however, nest building is a rather stereotyped performance, presumably representing an internal drive little influenced by social factors [565, 655] The female, motivated to build a nest, goes about her task mechanically, gathering up all available material in the cage and taking care to include her own tail.[603]

Once constructed, the nest is defended by most strains of rats Intrusions are resented and the intruder is viciously attacked Such behaviour may be modified under laboratory conditions so that the experimenter is tolerated.

Retrieving. When rat pups stray from their nest, the mother retrieves them. Unlike the opossum, she grasps her baby in her mouth, seizing it by any conveniently exposed portion, carries it to the nest, where she deposits it, and then returns

for the next.[137] This behaviour is not unlike the transportation of nesting materials[495] or the hoarding of food.[306, 655] The natural propensity of the rat to bear burdens may be the common core of such activities, the specific form depending on the specific situation. The retrieving of young usually makes its initial appearance when the first litter is cast. It has

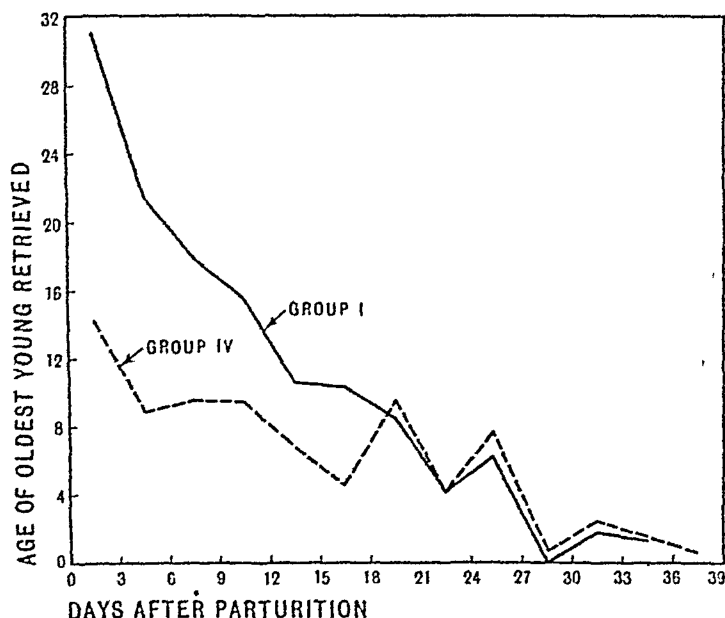


Fig 6. Waning of retrieving activity in the white rat. Group I, youngest pups offered first; Group IV, order reversed (*Courtesy of B. P. Wiesner, and N. M Sheard, Maternal behaviour in the rat, London: Oliver and Boyd, 1933, p. 96*)

been found to occur spontaneously in some virgin rats and has been induced in many by caging them with young. Further facilitation of this tendency results from injections of gonadotrophic hormones of the anterior pituitary. When first attempted, the act is performed awkwardly but improves with practice Shortly after the birth of young, when retrieving activity is at its height, the mother reacts quite indiscrimin-

ately, including young mice, rabbits, and kittens as well as young of her own species.[270, 655] She will prefer a baby rabbit to a much smaller but older rat. Her responses are probably determined by some specific property of babyishness, shared by these assorted species. Even this criterion may be abandoned in the full flush of retrieving zeal. In some rare instances in which a second litter had been delivered before the mother had ceased to retrieve the young of the first, she was seen carrying not only the newborn but dragging along the big young of the earlier litter and even her own mate, which was heavier than she. Within a few days, however, her ardour had cooled to the point where her activities were confined to the new babies. Sometimes the drive to retrieve is so impelling that a mother rat will steal the young of another.[173] Gradually, during the course of nursing, the intensity of retrieving wanes, as indicated by Fig. 6.[655, p. 96]

Suckling. The biological goal of maternal care is obviously suckling the young. In the rat, the mother permits the offspring to nurse but does not take an active part in the process. Most of the activity is displayed by the young ones, which crawl underneath the mother's body apparently in an attempt to keep warm. While in this location, searching movements of the head lead them to the nipples. The main task of the mother is to sit still and keep from squashing the pups. Normally the lactation period lasts about 21 days, during which time nursing behaviour gradually decreases. By replacing the original litter with a younger one, however, it has been possible to prolong suckling far beyond the normal limits – indeed, even beyond the limits of lactation, which were themselves extended by the continued suckling. In one group, six animals were still maternal in behaviour at 260 to 297 days *post partum.*[655]

Lure of the Litter. In view of the importance of maternal behaviour in the life of individual and species, a number of investigations have sought an objective measure of it. As in sexual drive, obstruction methods have been found useful. One form of obstruction is a maze which the mother must learn in order to reach her litter. In one experiment[556] a

tempting dish of bread and milk proved to have greater incentive value than the litter Direct preference tests, however, failed to bear out these findings Although bread was preferred to young before parturition, the preference was reversed after the birth of the litter.[655] If hunger becomes disproportionately stronger than maternal drive, a mother rat may eat her own babies. Cannibalism is a fairly common observation of those working with rats It has also been noted in the closely related mouse In one case, after 20 hours' food deprivation, the mother refused to retrieve young any longer and, some hours later, ate two of the five in her litter. On presenting her with the remaining three, however, this wayward mother transported them as usual Apparently the maternal drive again predominated.[495]

We have already noted the comparative superiority of the maternal drive in the Columbia University studies and pointed out the difficulty in interpreting the results Since the incentive chamber which contained the litter was also home, the motivation was ambiguous In cases where parturition had occurred in the living cage instead of in the incentive chamber of the obstruction box, the drive was reduced. Although this was attributed to a failure of the mother to recognize her young in the strange setting, it may simply have represented the residual maternal drive remaining after elimination of the territorial component. Maternal drive as expressed in the obstruction box decreased in intensity with the lapse of time *post partum* and was cut in half within five to seven days A still further decrease in the incentive value of the litter appeared if the mother was separated from it for several hours before the trial, possibly because of the setting up of other habits in the interim [443] In evaluating maternal motivation, it is especially noteworthy that the specific urge to reach the litter, like nest building, was at its peak during the period when spontaneous general activity was at low ebb

This brief survey has revealed in the rat a complex pattern of maternal behaviour which, though largely on an instinctive level and little affected by social conditioning, plays an important part in the life economy.

Although there are fewer experimental studies of maternal behaviour in the mouse, the available material suggests a close resemblance to that of the rat In a series of exploratory experiments, Rey has presented many interesting observations on this species.[495] Wide individual differences in maternalism have been observed. The response to the first litter is relatively weak but improves with reproductive experience. To what extent the improvement is due to practice and to what extent it represents a perfecting of physiological mechanism is a nice question whose answer awaits further experimentation.

In the mouse, nest building and retrieving appear as prominent features of the maternal pattern As in the lower vertebrates, familiarity is important, and the original nest is apparently very attractive to the mother. In one experiment, when the young were placed in a newly constructed nest, the mother promptly transported them back to the old; when they were placed in a nest constructed out of material from the old, the mother seemed to be undecided at first, finally compromising by returning some of her litter to the old and leaving the others in the new nest.

In the mouse as in the rat, maternal behaviour, although most easily aroused in lactating females, is not limited to mothers but may be induced in virgin females and in males by caging them with young for short periods of time. That such behaviour is not hormonally conditioned is shown by its appearance in animals whose gonads and pituitaries have been removed.[355, 356, 357] Thus the mouse shows more susceptibility to outside influences than the rat

MATERNAL-FILIAL BEHAVIOUR IN THE GUINEA-PIG

Maternal Care. The guinea-pig affords an interesting contrast to both opossum and rat in maternal-filial relationships. A Minerva among animals, the guinea-pig springs full-grown into the world. After a gestation period more than three times that of the rat[33, 308] and even longer in proportion to that of

the opossum, it is not surprising that at birth its brain development and correlated adjustive capacity are far in advance of either of these forms[614] It has a full coat of fur, remarkable agility, and a readiness to cope with solid food. This infantile precocity obviously reduces the need for maternal care. There are no embellishments in the form of nest construction or retrieving in this species. Even the sucking, though continuing for about the same interval as in the rat, is not so vital because of the early addition of solid foods The role of the mother consists mainly of licking off the fetal membranes in the newborn and assuming a crouching position as they nurse[33, 545] The simplicity of maternal behaviour is revealed in the following unpublished notes on the birth of a baby guinea-pig:*

12 55 p m.	E. noticed R-160 hunching over, licking one baby. Tried to remove mother, still attached by cord. Mother eats cord in course of licking. Baby squeaks at intervals.
1.00 p m	Baby nosing mother's hind leg. Mother stepping on baby. Baby noses toward nipple.
1 05 p.m.	Baby under leg again.
1 07 p m.	E. took both out on lap. Put baby to nipple. No response.

Strength of Drive. In a pioneer study of maternal drive[15] a mother guinea-pig, two hours after parturition, was placed in a wire box with her litter in plain sight Even under such tantalizing circumstances, however, she paid no attention to her babies and 'only in rare cases did any mother gnaw and attempt to reach her young family, even though the little ones had been away from her for an hour or more.'[15, p. 307]

In our own recent work[545] we attempted to explore the field, investigating the various factors involved in maternal behaviour. Using the hurdle box described in the previous chapter the mother was placed in one end with her litter in the other and timed until she nosed the door of the incentive compartment During the course of the normal three-week lactation period, most of the guinea-pigs, like the mother rats previously studied, showed a gradual weakening of the drive to reach their litters Their increasing reluctance to cross was

* Observations by Seward and Seward

indicated in these experiments by the increased time required to jump the hurdle separating them from their young. The only exception was a mother whose behaviour toward her offspring in the maternity cage was so abnormal that we regarded her as a case of 'puerperal insanity'. Unlike the rat, maternal interest could not be revived by exchanging young litters for old. In spite of all change in external circumstance,

TABLE 3. *Comparison of Unfed with Fed Condition*

Animal	Number of Crossings			
	Unfed Condition		Fed Condition	
	Empty	Mother	Empty	Mother
S C 29	4 7	22 0	2·3	17 0
S C 31	5·7	22 7	6 0	22 6
S C 33	5·7	19 3	3 3	15 5
S C 35	6 7	26 2	1 3	19 2
S C 32	3·0	16 3	1 3	22 2
S C 34	4·7	17 8	0·7	5 7
S C 24	2 0	17·8	0 7	10 5
S C 26	1·7	12 0	2 3	8 0
Average	4 3	19 3	2 3	15 1
Average Difference	15 0		12 8	
Critical Ratio	14 42		6·27	
Probability	0 01–		0 01–	

it followed an inevitable decline. In the guinea-pig, the weight of the evidence thus points even more forcibly than in the case of the rat to the predominant importance of hormonal factors in maternal behaviour.

Filial Behaviour. In spite of the rather casual attitude of the mother guinea-pig toward her young, she apparently plays a very important part in their lives. In the course of our study of maternal behaviour we were impressed with the greater intensity of drive which the young displayed toward their mothers[537] The guinea-pig's early independence of the mother as a source of nourishment afforded an opportunity of disentangling hunger from the total pattern of filial devotion. Running babies to mothers in the hurdle box, we found

that although hunger was an important factor in this drive, even in its absence the suckling guinea-pig was motivated to seek its mother. The parallelism of the data in Table 3 obtained under fed and unfed conditions suggested the operation of some factor other than hunger throughout the same period of lactation.[537]

As in the rat, this may well be a need for warmth. It is all the more likely in the guinea-pig since the litters are too small for the members to keep one another warm. It is the mother who must protect her young family from the cold through the warmth her large furry body radiates as well as through the fat-rich milk she feeds them.[492] By the time the pups become altogether independent of mother's milk, they are also large enough to depend on their own temperature-regulating mechanisms. Thus it would seem that the needs for food and warmth are simultaneously present Moreover, the greater strength of the mother in comparison with the empty compartment as incentive suggests that these needs are specifically dependent upon the mother for their direction

Perhaps the most interesting finding was the fact that the young guinea-pigs continued to seek their mothers throughout the observation period, even though they were suckled less and less often We may assume that, through the mother's ministrations to their biological needs, the babies became conditioned to her so that even after nursing had ceased and they no longer needed to snuggle beneath her for warmth, there was some tendency for them to cross the hurdle just to sit beside her. In other words, the mother had become a value in her own right. May we consider this the dawn of primary in-group control?

BASIC FACTORS IN RODENT FAMILY LIFE

Maternal behaviour, like mating, depends upon the central nervous system The brain is essential for the proper organization of this complex pattern. As we have noted, it is well established for the rat that failures of maternal behaviour in one or more respects increase with increasing destruction of the cortex [72, 587] Instinctive mechanisms may be brought into

action either by internal chemical stimuli or by external stimulus patterns. Present evidence indicates species differences in balance between the two sets of factors. We have just noted the importance of hormones in the maternal activities of the guinea-pig and the rat. Of the two forms, the rat is somewhat more amenable to external influences. In the rat, maternal behaviour has sometimes been reported in normal males and virgin females[389, 655] when caged with young. Usually, though not invariably, such cases follow sensitization by pituitary hormones. In the mouse, we found evidence of even greater independence of endocrine factors. We may conclude that, in the rodent, reproductive activities are not exclusively dependent upon internal conditions but, under certain circumstances, may be externally motivated.

CHAPTER 6

Conjugal Relations in Monkeys and Apes

FROM white rat to monkey is a steep climb, but the very distance that separates them brings into sharp relief contrasts and similarities that might otherwise be overlooked. The tremendous advance in brain development has meant a tremendous advance in educability and a corresponding sacrifice in ready-made instinctive modes of adjustment The vastly prolonged period of social dependence which this change entailed has resulted in firmer family ties and has helped to bind different families more closely together in the life of the social group. At this almost human level we see the first glimmerings of culture. Although the changes may be striking, we should never lose sight of the fact that from lowest vertebrate to man they are merely differences in degree There is continuity throughout, although it is increasingly difficult to recognize as the cultural superstructure increases in complexity.

GENETIC STUDIES OF SEX

'*Infantile Sexuality.*' A behavioural change which attracts our attention at the primate level is the extensive repertory of sexual activities which are included in the social play of juvenile animals [700] This is not new in the course of evolution It has been especially noted among birds. Armstrong has observed month-old thrushes in coital attitudes, young red oven birds singing in their nests, and a 21-day-old dove brooding its mother's egg.[32] Among monkeys and apes the premature occurrence of reproductive items forms part of the common stock of play behaviour in childhood Even a young monkey reared in isolation, which at first showed little in the way of explicit sexual behaviour, soon learned from his fellows when allowed normal social contacts [208, 209] In infant chimpanzees various expressions of social excitement, such as romping, teasing, fleeing, fighting, petting, licking, and others were frequently forerunners of sexual response.[91] It is not

until puberty that they acquire reproductive significance. Their lack of specificity during childhood makes them susceptible to conditioning in various ways so that the emerging adult pattern may show wide variability. The presexual play of primate childhood, however, is extremely diffuse and may be conditioned in a variety of ways.

Inadequate Stimuli For stimuli we must look beyond the range of the biologically adequate. Inanimate objects, e g., fruit, sticks, and bottles, have served autosexual purposes when normal social outlets were barred. Sometimes members of other species are sought in sociosexual play. Advances to snakes, cats, dogs, foxes, and human beings have been recorded on the part of primates Yerkes describes a young gorilla, Congo, which displayed sexual interest in a dog.[683, pp 520-21]

... pulling the animal toward her, she turned him on his back and, stepping astride, assumed a male copulatory position and executed appropriate movements. This persisted for a few seconds, when stepping from above the dog, she threw herself on her back and drew him for a few seconds in what had every appearance of sex embrace.

Within a given species, homosexual behaviour plays a prominent part in the young primate's repertory before either dominance or adult sexual status has become established. As in the lower organisms, mounting, or male sex behaviour, is often correlated with high dominance and may be displayed by individuals of either sex. To what extent such behaviour represents *sex* drive and to what extent *social dominance* cannot be determined without careful analysis of each situation

Non-valid Responses Since behaviour that is operationally sexual may be otherwise motivated, from a reproductive standpoint we are justified in speaking of non-valid responses as well as inadequate stimuli. Because of its early general social rather than specific reproductive significance, sexual behaviour is often used in the service of non-sexual drives. In primate societies based on dominance, an animal may assume the female sexual position to indicate its subordinate status in the presence of a social superior. By presenting sexually, the weaker animal frequently secures food or escapes an impend-

ing attack. In other cases sexual behaviour has been used to initiate an attack by inveigling an enemy into closer contact. Furthermore, in frustrating situations, sexual responses frequently occur as a substitute for more effective activity. Such perverted sexual responses serve ulterior non-sexual ends in cases where other behaviour is precluded by the social situation.[91, 260, 323, 617, 700] They make their appearance in youth but are carried over to maturity and used as occasion demands[398, 399, 401]

Adult Mating Patterns. The advent of puberty with its upsurge of hormones and accession of vigour is of great importance in welding the playful and perverted sexual activities into a dynamic pattern with reproductive significance. Physiology alone, however, is not solely responsible but must be supplemented by experience if normal adult sexual relations are to be achieved In the chimpanzee, initial copulatory attempts frequently end in failure. The male novice behaves in the playful and puzzled manner of the immature animal and requires a period of trial and error for smooth motor performance When fully developed, the two sexes display reciprocal mating behaviour· the male makes a direct approach, imposing his will at times by physical force, while the female uses indirect techniques involving cajoling, petting, and allure.[678]

In summary we may point out that the development of primate sexual functions, like the development of other functions, proceeds from general to specific. At first, sexual behaviour appears as one of many forms of social adjustment, occurring in a wide variety of non-sexual situations Gradually, as the combined result of physiological and experiential factors, the sexual responses become integrated into a pattern precisely adapted to the reproduction of the species.

THE QUESTION OF PRIMATE OESTRUS

Monkeys We have noted that mating in the rodent is restricted to recurrent periods of oestrus Copulation outside of these periods is unknown The only evidence of modification resulting from external conditions may be found in the cases

of oestrous rats which gave more intense responses to the more aggressive males.[35] No amount of male aggression, however, will lead to mating when the female is physiologically unprepared for it. Monkeys and apes, on the other hand, can copulate at any time during the female's cycle. This does not mean the lack of a true oestrus in such forms but merely suggests the operation of social factors in addition to biological ones. Recurrent periods of increased sexual activity have been reported from lemur[374] to man.[169] Anatomical cycles were early revealed in macaque monkeys of the Old World by vaginal smears as well as by changes in colour and texture of the genital skin.[152, 154, 273, 653] There is also evidence of a correlated behavioural cycle, with increased sexual activity before, followed by a decrease after, ovulation.[38, 40, 42]

The most significant data on sexual periodicity in the monkey have recently been gathered in an extensive field study of a species of macaque [133, 134] Under free-ranging conditions, oestrus is apparently much more clearly revealed than was indicated by previous observations in captivity. Freed from the confinement of the laboratory, the animals may give more spontaneous expression to sexual drive. With plenty of space in which to roam, dominance-subordination relationships are less often elicited and consequently less often motivate sexual behaviour. Such social influences as dominance, personal attachments, and habit are not ruled out in the wild, but sexual behaviour may be taken at face value to a greater extent than in captivity. Under free-ranging conditions, the female during heat was found to leave her normal subgroup and to approach the males despite frequent attack. Assuming a crouching posture, she solicited the males until one or more responded and mating ensued She remained in close association with her sexual companions for several days, during which grooming was persistent and copulation frequent Following oestrus, the female again became part of the cluster of females and young. The occasional matings outside of oestrus did not involve close consort associations and may have represented either the beginning or ending of receptivity, or non-sexual motivation.

An oestrous cycle has also been established for another Old World monkey, the baboon. Vaginal smear phases have been found in these forms,[235] but more striking is their periodic sexual skin swelling.[699] The enlargement begins at the end of menstruation, reaches a climax at the time of ovulation, and thereafter subsides.[671, 701] Males prefer females in this condition, even permitting them to take a little food at such times without the punishment that would ordinarily be inflicted for their presumptuousness. Females in turn are most responsive during their swelling phase, remaining close to their mates and frequently soliciting them. The female with the greatest swelling becomes the chief wife pro tem. When the sexual skin is quiescent, mating seldom occurs in any species, and in certain ones is never permitted.[231]

Monkeys of the New World exhibit oestrous phenomena essentially similar to, though more primitive than, those of Old World species.[130, 131, 241, 268, 375] Sexual behaviour in the howling monkey, for example, is largely restricted to recurrent periods of oestrus, but it may occur sporadically at other times Like the macaque, the oestrous female may copulate with several males, and after mating she tends to remain in close association with the male for several hours or more.

Castration-replacement experiments have demonstrated the dependence of oestrous phenomena in the monkey on physiological mechanisms [41] Owing to the increased susceptibility of the primate to social influences, however, the behavioural manifestations do not coincide so closely with the physiological state as in the lower mammals and often mask the underlying biological cycle.

Apes. Among the higher primates there is even greater discrepancy between ovarian events and mating behaviour. In the proto-anthropoid gibbon, for example, a clearly defined menstrual cycle has been reported,[129, 136] but copulation is apparently less restricted to the follicular phase than in the monkey.

A menstrual cycle, with phases marked by changes in vaginal smears, has also been determined for the gorilla but we have no information concerning behavioural correlates [445]

The chimpanzee has supplied us more generously than any other ape with evidence on this point. Cyclic variations have been observed which are homologous with those reported for other primates.[187, 206, 686, 695] In the case of one animal on which a long time study was conducted, these swelling periods determined and limited sexual receptivity[619] Other cases are on record, on the other hand, in which copulation did not seem to be markedly influenced by oestrus. The famous Johns Hopkins pair, Dayton and Evo, mated without reference to the female's cycle[529] Such cases originally cast much doubt on chimpanzee oestrus and led to confusion in interpreting

TABLE 4. *Average Ratings for 233 Experimental Matings*

Measure	Cycle Phases					
	Menstrual	Post-menstrual	Tumescent	Maximum Swelling	Detumescent	Pre-menstrual
Receptivity of F	0	0	1 88	3 01	0 74	0
Desire of M	0 44	0 17	2 82	3 54	1·91	0 48
Acceptance of F	0	0 03	2 29	3 18	0 91	0
Acceptance of M	0	0 03	1 82	2 63	0 61	0
Frequency of copulations	0	0	21	65	3	0
Number of observations	9	30	34	89	23	48

conflicting observations Current evidence, however, points as definitely to biological oestrus for this manlike ape as for the lowly monkey.[684, 685] In an extensive series of observations, including several hundred matings under controlled conditions, Yerkes found that congenial, experienced pairs were likely to restrict their sexual activities to the period of swelling. Table 4, based on ratings of sexual responsiveness, indicates a close relationship between mating behaviour and swelling phase[680, p 95]

In cases where the consorts were unfavourably mated, the female, disregarding her menstrual phase, might tactfully offer herself to the male as a gesture of placation, in a manner comparable with the prostitution behaviour of monkeys. Thus again we find social factors complicating the picture by inducing mating at biologically inappropriate times. Con-

firmation of Yerkes's findings may be found in Young and Orbison's[694] recent investigation of the relationship between sexual status and behaviour. In eight female chimpanzees intensively studied they found a well-defined period of sexual responsiveness during the follicular phase of the menstrual cycle It was not apparent after removing the ovaries There was no sign of a premenstrual increase in affective behaviour or of a menstrual depression. In fact there were no distinctive behaviour changes during the flow The chimpanzee showed fewer cyclic behavioural fluctuations than the monkey but more than women. Moreover, at the chimpanzee level, individual differences appeared to be more important than menstrual phase as determiners of heterosexual behaviour. This represents a marked shift in balance in favour of social determination, in comparison with the situation in lower mammals where differences between individuals play a much less conspicuous part. The final step is taken by man whose range of individual differences is so wide that it effectively masks any cyclic effects as well as differences attributable to sex membership

SEX AND DOMINANCE

A Two-factor Theory of Sexual Behaviour As in the lower organisms, the interpretation of sexual behaviour is made difficult because of its relationship to dominance In primate societies where dominance is the chief means of social control, the externalized sexual behaviour that we have encountered in genetic development is often used as a power weapon rather than as an expression of sexual tensions On the basis of experimental work on a variety of primates, Maslow[398, 399, 400, 401] has been able to clear up many confusions resulting from the dual motivation of sexual behaviour Observations in a competitive food situation revealed a basic dominance drive which seemed to determine the satisfaction of bodily needs by utilizing the specific biological drives of feeding, mating, and aggression as channels of expression Table 5 presenting the results of two studies on pairs of macaques shows the types of behaviour most closely correlated with dominance.[400, p 182]

Noting especially the sex-dominant behaviour, the table emphasizes dorsoventral or male mounting. The dominant animal in a pair did 98 per cent of the mounting regardless of its sex. In natural groups made up of both sexes, the dominance role usually falls to the male because of his superior size and strength and, as a consequence, we think of dorsoventral mounting as characteristically masculine. Its correlation with dominance may help to explain the homosexual behaviour frequently observed in immature animals. Later, when the sex drive has become more specific, heterosexual behaviour

TABLE 5. *Occurrence of Behaviour in the Dominant Animal*

Behaviour Item	Percentage of Total Occurrences	
	Experiment I	Experiment II
Food getting	97	80
Bullying	99	99 9
Initiation of fighting	85	97
Dorsoventral mounting	98	89
Presentation	43	27
Flight	1	0
Passivity under aggression	1	10
Cringing	0	0

naturally predominates Homosexual approaches remain restricted for the most part to the expression of dominance.

Returning to the table, we should note that sexual presentation is less characteristic of the dominant than of the subordinate member of a pair. This would support the interpretation of prostitution behaviour as an admission of social inferiority and a supplication to the more powerful for favours

In chimpanzees observed in a non-competitive situation, neither sexual presentation nor mounting behaviour indicated dominance status. Grooming was the only form of social behaviour that was a reliable accompaniment of dominance [156]

Oestrus and Social Status. One further point which Maslow's studies have brought out is the periodic change in social relationship with oestrus At this time a female that normally enjoyed high dominance assumed a subordinate role In cases

where it was usual for a female to dominate a male, oestrus caused a reversal in relative status Somewhat different findings were reported for free-ranging rhesus monkeys. Under these conditions males are at all times completely dominant over females During oestrus a female's status actually *rises* within her own sex group. This makes it difficult for the male to maintain his superiority, and he may have to use force to bring the female to submission. At the same time he shows more *tolerance* for the female, admitting her to closer association than normally and allowing her to feed with him from small food trays The female seems to gain this increased tolerance both by copulating with the male and by the mutual grooming which she seems to invite during the period of sexual skin activity.[133]

To Yerkes we are indebted for comparable information on the chimpanzee In the study to which we referred above, ratings on dominance as well as on sexual behaviour were determined They revealed a general tendency for the male to lead and control and for the female to follow and assume a subordinate role It is this male aggression which is responsible for the atypical copulations occurring outside of oestrus To the command of a strange, unfriendly, dominant male, the more timid female may acquiesce regardless of sexual phase or preference. Other experiments were specifically designed to determine the effect of oestrus on dominance status [157, 679, 681, 682] Following a technique introduced by Maslow, food titbits were offered one at a time to a pair of chimpanzees. The results consistently showed the dominant animal, whether male or female, to yield priority at the food chute to a female partner in heat. In mates, the male that was usually in control of the situation permitted his female to take all the food in exchange for sexual favours while she was in her swelling In the less usual cases of female dominance, it was the female that yielded privilege during heat. Where two females were paired, the dominant one was likely to grant privilege to the subordinate during the latter's swelling. If the dominant female were receptive herself, she might encourage or permit the other to act as male. In experiments where

the expectation of success was more nearly equalized for the partners by a technique of pre-feeding, genital swelling was still a decided asset in the females' attempt to obtain food at the chute They enjoyed this advantage whether paired with males or other females whose ovaries had been removed.[463]

Thus, in ape as in monkey, oestrus is responsible for re-adjustments in the social relationship between the sexes. It would be an over-simplification to describe these changes as shifts in dominance status. In the monkey, although the male maintains strict dominance over the female, he allows her greater privileges than when she is not receptive In the chimpanzee the general pattern is for dominance in the food situation to be temporarily traded in for sexual accommodation An oestrous female may entice her dominant mate away from the chute or, on the other hand, may grant privilege to her subordinate mate presumably in return for favours. Analogous considerations are applicable to female pairings Oestrus affects chimpanzee dominance, to be sure, but does not bear the fixed relationship to it that one might expect if the physiological factors were solely responsible In the ape, the physiological state affords a means of shifting the existing dominance status in line with the motivation uppermost at the moment.

At the anthropoid level, the sociosexual relationships depend on mutual recognition and agreement. To the biological function of mating, companionship is added as an end in itself. As we have noted, personality differences, with all they entail in the way of compatibility or its opposite, become conspicuous Like married couples, chimpanzee mates present a variety of conjugal pictures. Although there are as definite sex differences in behaviour as in physique, individuality seems more influential than fixed traits of masculinity and femininity.[677, 678] Many factors affect social relationships and responses Important as are such physical characteristics as size, strength, and vigour, we should be careful not to underestimate psychological traits 'Often the smaller and weaker individual irrespective of sex, stands superior by reason of greater courage, self-confidence, determination, and persistence'[678, p 196]

In conclusion, we may point out thát within the primates, biological mechanisms are increasingly less rigid in their operation and the social influences more numerous and intricate in their effects. Personality makes its appearance, and sexual as well as other specific behaviours must be viewed in relationship to the total structure

CHAPTER 7

The Family in Prehuman Primate Society

THE gradual recognition and appreciation of individuality and the increasing dependence of the young conspire toward more permanent mateships and more stable family groupings as we ascend the primate scale Family life centres around the care of the young Because of her close physiological relationship with her offspring, the mother is always chiefly, and often solely, responsible for bringing up her family.

PARENT-CHILD RELATIONS

Lemur. Our knowledge of the reproductive behaviour of primates has recently been increased by Lowther's careful study of a species of lemur [374] Observing a mated pair at close range, the author noted that a week before the birth of twins the mother built a nest of torn newspapers in her sleeping box Shortly after birth, the little ones showed considerable maturity. they could cling to the perpendicular surface of the box and stand on all fours At first, they clung to the mother with their feet, but after the first day or two they could be found under her, feeding, or in the nest. The mother was observed to carry the babies about, picking each one up in her mouth by the neck or back in the manner of many lower mammals. There was much evidence of maternal solicitude When the young were inspected, the mother would hover near and promptly retrieve them as soon as they were released, returning them to the cage and licking them. This maternal interest continued unabated even when the young became too heavy to be carried and no longer suckled After a year of observation, the mother was still seen to caress her offspring.

The father, on the contrary, paid little attention to the twins and never assumed as much responsibility for them as the mother

Monkeys. The most complete account of maternal behaviour among the lower primates concerns the macaques.[275, 276, 354, 621] A sample protocol from Tinklepaugh reporting the birth process in a new mother illustrates the essential features:[621, pp. 263-4]

1 48 a.m Head of baby appears.
1 49 a.m. Mother reaches back with both hands, seizes and draws head around to one side and forward, licking it as she does so. Baby begins crying Washing process is continued
1.57 a.m. Baby, left to its own efforts, clings to mother's thigh, cries, and looks around.
2.06 a m. Mother lays afterbirth down and licks baby. Baby looks around, yawns.
2.08 a m. Mother alternately eats afterbirth and licks baby. Baby clings unassisted to the mother's side and persistently peers about.
2 45 a m. The baby, in the course of its mouthing through the mother's fur, locates the right nipple and mouths it

It is a temptation to humanize these activities by assuming an altruistic mother love which impels the parturient monkey to give her baby its bath and dinner. Scientific objectivity, however, demands a simpler explanation. The bath is performed for the sake of the mother rather than the baby The foetal fluids satisfy a craving on the part of the mother, associated with her physiological state. Licking these fluids off the baby is not different from licking the fluids off her hands or consuming the afterbirth. Even her fighting to prevent the removal of her infant is apparently related to this special hunger drive since she will cling just as tightly to the placenta before its consumption. Again in the case of the baby's dinner, the facts do not warrant our giving credit to the mother. Finding the nipple is purely accidental, resulting from the baby's trial-and-error exploration of the mother's fur with its mouth As Tinklepaugh and Hartman expressed it in one investigation, 'from a nutritional standpoint, the baby suckles the mother, the mother does not nurse the baby.'[621, p 282] Further evidence against maternal altruism in feeding the young is the resentment expressed by mothers of their infants'

Moreover, she directs their spontaneous behaviour to a certain extent, assists them in crossing spaces between trees, and retrieves those that fall. The bond between mother and child is apparently very specific since infants only a few days old react positively to their own mothers, carefully avoiding other animals of similar size and colouring Weaning is usually initiated by the birth of a new baby. Sibling rivalry is sometimes very keen, the older child trying to pull the infant away from the mother or to wedge itself between infant and mother.

Through play the juvenile howler comes to associate more and more with other members of his group. The father plays a part in the socialization of the young howler. Although indifferent at first, he shows increasing interest in the child supplementing its other social relations and helping to integrate it with the larger group

In the case of the spider monkeys of Panama, the period of dependency is longer than in the howlers, and tuition plays a more conspicuous part. The mother helps her young over difficult places by holding together separated vines until it has safely bridged the gap, and when making dangerous crossings over several tree-tops, she carries the young animal on her back.[131]

Apes One of the clearest pictures of parental behaviour among the higher primates is afforded by the gibbon. In this form it is not unusual for new mothers to fail to take adequate care of their young In one instance a female in labour jumped away at the moment of delivery, thereby letting the baby fall. She proved to be so indifferent to her offspring that she had to be forcibly held while it nursed. Normally, during the first month or six weeks, the young gibbon is in constant contact with its mother, whose body serves as a kind of furry nest. As the child's motor capacities develop, it becomes explorative, often leaving the mother, while she is resting, to play with other children. Gradually complete independence is attained, and the young individual takes his place among his peers [129, 151]

From the first, the father gibbon shares with the mother responsibility for the young He has even been known to eat

part of the placenta! He co-operates in inspecting, grooming, manipulating, and playing with the youngsters. Moreover, he protects them from danger. In one case a juvenile adopted an adult male which carried it most of the day.

Of the anthropoids, the chimpanzee has been subjected to the most carefully controlled observations of maternal behaviour. In comparison with lower primates, the outstanding difference lies in the wider range of variability and in the relatively greater role of experience. In spite of similarities to the monkey in parturition process, individual differences are conspicuous from the start. It is customary for the mother to lick up from the floor of the cage available fluids and partially to consume the afterbirth. These activities are not invariable, however, and may even be omitted without preventing later maternal ministrations. The experienced mother accepts her infant, takes it up, examines it, gently and carefully grooms it, and permits it to cling to her, carrying it about almost continuously.[684] She resents interference by man or other animals and does her best to prevent separation from her baby.[94] Cases have been reported where breathing was started in apparently lifeless newborn infants by their mothers' adept manipulations.[17, 212] In addition to caring for its physical welfare, the chimpanzee mother plays games with her child, involving tickling, chasing, grasping, tumbling, boxing, rocking, hugging, fondling, lifting, etc.[90, 575] Moreover, there seem to be systematic attempts to exercise the little one and even to give it tuition in walking.[677, 684]

The new mother, in contrast to one that has previously borne young, is frequently baffled by the advent of the baby and does not seem to know how to meet the situation. She may fail to behave appropriately and do things entirely unfitting. One young mother, Cuba, viewed the little stranger with curiosity, biting its foot as if to test its edibility, poking straws into its eyes and ears, and constantly moving it about. She was unwilling to let it cling to her or nurse.[684] In the more extreme case of Dwina, the female went into paroxysms of fear at the sight of the infant comparable with those which she had previously displayed upon the sudden appearance of

earthworms and other strange objects. This abnormal maternal behaviour, however, may have been in part a toxic effect since the poor animal developed a fatal puerperal sepsis soon after.[618]

There is little doubt as to the importance of experience in chimpanzee parturition and infant care. Practice helps to adapt the individual in general and also to perfect specific acts. To what extent social tradition enters the picture, we cannot state with certainty, but the proximity of other mothers and their assistance to the new mother should not be overlooked.

TABLE 6. *Average Rating for Intensity of Reaction*

Mother	Test 1		Test 2	
	Own	Strange	Own	Strange
Josie	35·5	20 6	36 7	19 2
Wendy	54 3	20 0	54·5	35·2
Pati	64 0	27 0	36 7	12 6
Mona	48 0	19 3	40 0	4·5
Fifi	7 2	6 5	9 2	7 2
Average	41 8	18 7	35·4	15·8

Maternal solicitude in the chimpanzee outlasts the physical dependence of the young. The behaviour of the mother when faced with her offspring after separation has been experimentally studied.[572] The intensity of the maternal reactions was judged on a five-point scale ranging from 0, representing complete indifference, to 100, indicating violent agitation expressed in loud cries and attempts to snatch the baby from the experimenter's hands. Several series of tests were made, after different intervals of separation In some, each mother was confronted with a strange baby in addition to her own in order to test her ability to discriminate. In all cases the young animal was held in the arms of the experimenter before the mother's cage. Table 6 shows the results of a test made after a full year's separation. Two test periods eleven days apart appear in Table 6.[572, p. 490] The difference in maternal responsiveness to own as compared with a strange baby is strikingly shown in the data.

CHAPTER 8

Sex as a Value in Primitive Societies

OUR survey of animal societies has demonstrated the flexibility of sexual behaviour. We have seen it become increasingly subject to social regulation as we ascended the evolutionary scale. On reaching the human level we should be prepared to find society predominant over instinct. This is indeed the case Different cultures evaluate sex differently and shape individual conduct accordingly. In some it is granted relatively free expression as a source of pleasure and relaxation. In others it is hedged about with so many restrictions that it is regarded as merely a means of preserving the race A comparative study of the part played by sex in other groups will lead us to a better understanding of its role in ours.

A CONSTRUCTIVE SOCIAL FORCE: THE TROBRIANDERS

It is naively assumed by the layman that savages allow sex to run rampant. Nothing could be further from the truth. All cultures impose restrictions on sexual expression, sometimes more elaborate than those in our own civilization. Nevertheless, some groups regard sex as pleasurable in its own right and encourage their children to regard it in this way. Such a group are the Trobrianders, made famous by Malinowski.[391, 393] For them sex is acceptable as a natural interest whose development is progressive from childhood to maturity Aside from the major incest taboos which in some form appear in every society, sexual expression in childhood is quite free if performed in accordance with the accepted etiquette of privacy and moderation.

Childhood Sex Experience. Children become acquainted with sex at a very early age. Far from being shielded from it by their parents, they are often introduced to it by witnessing parental intercourse. This behaviour they imitate in the

popular game of husband and wife described by Malinowski as follows.[193, p. 58]

A small hut of sticks and boughs is constructed in a secluded part of the jungle, and a couple or more repair thither and play at husband and wife, prepare food, and carry out or imitate as best they can the act of sex.

Even though they may be incapable of performing the complete sex act, they apparently derive some positive pleasure from the genital manipulations involved as well as from the satisfaction of their curiosity. The attitude of the parents toward this activity as toward many others is one of indulgence. Children enjoy a friendly comradeship with their parents which results in an early emotional maturity readily reflected in the sexual sphere.

Premarital Love Affairs. In no phase of Trobriand life does the shift from childhood to adolescence come as a sudden change The transition is gradual throughout. The individual's ever-expanding social independence is extended to his amorous affairs, which at this time graduate from play to passion They now demand greater respect and become systematized into more stable relationships. The premarital liaison is a kind of tryout during which the adolescent has wide opportunity for psychosexual experience In view of the greater seriousness of relations at this period as compared with earlier sex play, privacy is prerequisite It is provided by the interesting institution of the *bachelor's house,* where an adolescent couple may go to sleep together. At first these assignations are rather furtive and irregular, but they become stronger and more permanent as the young people mature. Gradually a personal preference develops which ultimately leads to betrothal. The rule then becomes regular nightly intercourse and frequent appearances together in public.

Marital Reserve. As we have noted, sexual experimentation precedes rather than follows marriage. Honeymoon for the Trobriander, instead of being a period of sexual adjustment, is characterized by voluntary abstinence Newlyweds apparently think less of love-making than they have done for a long while previously. Although there is no cultural taboo on

sexual indulgence, the fact that the initial months of marriage are spent under the parental roof and eye serves as an effective inhibitor.

The changed attitude adopted toward sex with marriage is a natural part of the growing-up process Sex as pleasure is childish, and the adulthood value of sex is oriented toward status. Since a man must put away childish things, the break in kind of sex attitude is simply a mark of maturity and has no unfavourable repercussions on his personality. The Trobriander cannot enjoy full status in the group until he is married. There are no bachelors of mature age except idiots, invalids, and albinos. For the woman, to whom social status is less important, the chief motives for marriage are personal affection and the desire to have children in wedlock. The subordination of sex to other values is shown by the extreme reserve surrounding sexual relations after marriage. Malinowski reported great difficulty in getting any information concerning conjugal life. It is a breach of etiquette to remark upon the good looks of a wife to a husband, and to say, 'Copulate with thy wife', is an unpardonable insult and may lead to murder, sorcery, or suicide The strict restraint in the expression of erotic or tender attitudes between husband and wife contrasts sharply with their otherwise free and easy manner toward each other It contrasts even more sharply with the freedom permitted before marriage.

Mutual grooming is a social activity permitted husband and wife, through which tender as well as dominance attitudes may find expression.

As in our society, sexual monopoly in marriage is valued among the Trobrianders. The ego identification which this proprietary attitude entails results in the prevalence of jealousy with them as with us. Moreover, the rigidity of the marriage bond makes it brittle, and fidelity is well paid in social rewards to counteract the temptation of adultery.

Sexual Recreation. In addition to the regular sexual outlets provided by Trobriand society, various other opportunities are offered. Sex is not confined to preparation for the serious business of marriage but is also recognized as a source of

recreation. At certain seasons, especially at full-moon, the people gather together to play group games whose fascination depends largely on the erotic elements of physical contact, rhythm, and singing which they involve At certain times outright sexual licence is permitted. Orgiastic festivals are held in which sexual impulses may be satisfied in public, although normally such behaviour would be considered inexcusably bad taste

Deviant Sex Behaviour. An outstanding feature of Trobriand sex life is its freedom from perversion. Deviations from normal heterosexuality are ridiculed and in this way made undesirable. According to the prevailing ideology, perversions are a sign of sexual poverty just as eating inferior foods is a sign of economic poverty. They are indulged in only by those who are prevented from obtaining normal satisfactions. The dictum, 'Only an idiot masturbates', applies equally well to other forms of aberrant sexuality. Exhibitionism and peeping are serious breaches in the etiquette of privacy, and homosexuality between males is regarded as unclean because of its association with excreta. Undoubtedly the extraordinary richness of opportunity for normal sexual behaviour accounts for the absence of perversions The early socialization of the child contributes to this orientation by preventing the substitution of individual modes of adjustment for those in general use as well as by placing him directly and constantly under group pressure.

In summary, the Trobrianders place a high value on sex, regarding it as a source of passing pleasure as well as of serious, enduring attachment Sexual interest is allowed generous scope from earliest childhood to maturity. It is only after marriage that society frowns upon free sexual expression. The explanation of this sudden change from extreme freedom to extreme caution may be sought in the broader meaning of marriage to the Trobriander As noted above, when an individual grows up his chief concern is to maintain his social status through marriage rather than to continue the more childish interest in sex as pleasure. The extreme reticence between husband and wife appears to the writer as a means

favours she is able to control her husbands. It is she who takes the initiative in the sex act while the man plays up her erotic wishes by an elaborate ritual. Although not suffering from impotence, the Marquesan male labours under the constant threat of rejection for failure to please. Associated with this fear as well as with his food anxiety is the fear of being eaten by a woman. By regarding the penis as a feeding organ, he is able to derive some comfort from the notion that intercourse is a way of allaying her cannibalistic tendencies. Exclusive sexual possession is socially disapproved and the expression of male jealousy is in extremely poor taste. Such tendencies have to be rigidly curbed because Marquesan society could not risk male morale on which the whole economic productive system depends Fortunately male solidarity is preserved by the adoption of an attitude of disdain and aloofness toward women In spite of her sexual desirability, her limitations in other spheres are recognized and make for ambivalence in men.

Among women, there is open competition for excellence in the erotic arts in an effort to get the best 'catch' inasmuch as the most skilled will be chosen as wives in socially prominent households The wish to excel other women is expressed in a desire for pregnancy, a condition that carries with it special prestige and power over the chief husband. So strong is this desire that feigned pregnancy is one of the more common neurotic manifestations

Erotic Excess. The major threats of food and sex deprivation converge to create a cult of the erotic Sexual indulgence helps to reduce the tensions associated with the ever-present food anxiety and may even serve as an intoxicant in cannibalistic orgies In the recent depression in our own society, a similar turning to sex as a substitute for other sources of satisfaction has been noted [438] The over-valuation of sex in Marquesan culture serves the further purpose of making up in quality what is lacking in quantity owing to the scarcity of women

The sensual is woven tightly into the entire fabric of the society. Not only does it characterize adult relationships but

the child is introduced to it in earliest infancy. Maternal care is subordinated to the development of erotic techniques and the breasts as feeding organs are sacrificed to their sensual uses. Since woman's chief role is a sexual one, she is relieved of the burden of child care which is relegated to the secondary husbands. In the absence of emotional intimacy with his mother, the Marquesan child presumably lacks the sense of security and protection found in cultures where maternal tenderness is highly esteemed. As might be expected, no trace of the Oedipus complex can be found in association with such a deflated mother ideal, although the father-daughter type of incest fantasy has been noted. Failure of the mother to provide emotional security is also reflected in the folklore which represents women in the unfavourable position of cannibals and thieves of children's food.

In the structuring of Marquesan personality, tenderness has been exchanged for sensuality which characterizes every stage of development. Masturbation is used by adults as a pacifier for infants. In the case of girls there is even a systematic effort to elongate the labia, thereby increasing attractiveness. Sexual play is practised from earliest childhood, and regular intercourse is begun before puberty. Between puberty and marriage, young people form a special group whose function is to entertain at public ceremonies with singing, dancing, and the sexual accommodation of male visitors. The close of the feast is marked by multiple copulation

In general, sex among the Marquesans plays a complex, compensatory role. It serves as a way of draining off some of the anxiety associated with food. Moreover, the elaborateness of erotic ritual constitutes a kind of insurance against possible sexual starvation due to the scarcity of women The emphasis on sex, through the very sacrifice of maternal protection which it occasions, becomes all the more firmly entrenched as a substitute source of satisfaction.

GROWTH VERSUS SEX: THE ARAPESH

Sex Taboos and Child Development. Having examined a culture that rates sex highly, let us turn to one that definitely plays it

down in favour of another value. Such a situation may be found among the Arapesh of New Guinea, of whom Mead has given us an interesting account.[409, 410] For these people life centres around the concept of growth in all its aspects. As one of the most conspicuous and important examples of growth, child development naturally commands the most absorbing interest of the group. The maternal role is exalted and the male consistently imitates the female. According to native belief the child is the joint product of both father and mother over a period of time. At first frequent intercourse between parents is necessary to nourish the egg. As soon as the mother's breasts show the characteristic pregnancy changes, however, the new individual is considered safely launched in its development and from that time on must rest undisturbed within the mother's body. That means the cessation of all sexual activity. This taboo precludes coitus not only with the child's mother but with other women, too The husband may not even cohabit with another legal wife. These rules are scrupulously observed because Arapesh prospective parents are too eager to bear healthy offspring to risk their welfare. As soon as the baby is born, the father lies down beside the mother and shares with her certain dietary restrictions and magical rites. After five days of lying-in, ceremonies begin which gradually free the parents from many of the prohibitions to which they have subjected themselves. The sexual taboo is one of the last to be removed. It is not until the child takes its first steps that it is considered strong enough to endure its parents' sexuality again.

Adolescent Attitudes. The idea that sex interferes with growth comes to the fore again at adolescence. Even in the initiation ceremonies the emphasis is upon general growth rather than sexual maturity and potency. The Arapesh regard the menstrual function in woman as antithetical to a growth of yams and children and even to her own physical development. During the time she may neither cook, smoke, nor chew areca nut. During adolescence sexual experimentation of any kind is strictly forbidden because of the fear that it will stunt growth In the case of girls, sexual experience before full

maturity has been achieved is considered especially disastrous, preventing the development of the luxurious breasts which, because of their promise of rich motherhood, are the essence of womanly charm

Sex as Affection in Marriage. As in the development of the child, so in personal relationships, growth takes precedence over sex. Just as the Arapesh father 'grows' his child, the Arapesh husband grows his wife She becomes betrothed to him as a little girl when she goes to live among his people. To all of them she becomes closely attached and her feeling for her husband and his father and brothers is practically identical with her feeling for her own father and brothers After long years during which 'husband' and 'wife' live together like brother and sister, the assumption of sexual relations comes as a natural outgrowth of the affection already existing between them It is simply a more final and complete expression of the same kind of feeling. There is no interest in erotic satisfaction in sexual relations In fact, the occurrence of a specific climax or orgasm in women is not even recognized In men aggressive sexuality is played down. The sex act is apparently not a highly charged experience arising from physical passion but a comfortable mutual expression of affection for which both partners have been long and well prepared.

All in all, sex among the Arapesh is not regarded as a pleasure to be sought for its own sake. It has its place in society, but that place is to serve more important needs, to foster the genetic processes of growth around which group life revolves

SEX AS SIN: THE MANUS

The high evaluation of sex as pleasure by the Marquesans affords an interesting contrast with the low erotic value the Arapesh place on reproductive activities These differences by no means exhaust the range of cultural attitudes toward this important aspect of life, but time and space do not permit an indefinite multiplication of examples. Before we turn to a study of sex in our own culture, however, we shall glance briefly at the Manus, another New Guinea group described

by Mead.[406, 407] As among the Arapesh, sex is devalued. In this case, however, it is not merely a matter of keeping it in its place but of actually condemning it. Their religion surrounds it with a sense of sin reminiscent of our own puritan tradition.

Marriage as an Investment Manus culture, like our own, centres around the accumulation of wealth and property. Economic success is the goal of life and the means to that end is trade. Marriages represent one of the most important opportunities for investment because they provide the occasion for a variety of economic exchanges. Mead points out that the Manus financiers invest in marriages just as we invest in export companies or corporations. Advantageous marriages are pre-arranged early in the life of the individuals concerned by scheming parents. An initial betrothal payment is made for a male child in which a large number of relatives invest shell money and dogs' teeth. The recipients on the bride's side agree to pay these back in the future in pigs and oil. Other events associated with the institution of marriage also serve as gala occasions for commerce. Ceremonies marking puberty, weddings, and silver weddings are all capitalized in the same way. The individual even at his own marriage is lost in the scuffle for gain that goes on around him.

Religion v. Sex. When the older generation has so much money at stake in marriage, it is little wonder that every precaution is taken to keep roving sex preferences from interfering with this investment This is accomplished by the spirits of the recently dead ancestors whose business it is to supervise their descendants' economic and sexual lives. Punishments are meted out to those who neglect to invest the family capital wisely or who violate the sex code. At best, sex is regarded as a necessary evil, an ever-present threat to the economic exchanges in which the elders have invested their wealth. At worst, it is conceived of as inherently shameful and unpleasant.

The Sex Lives of Men and Women. The sexual relationship, permissible only between man and wife, is reduced to crude biological function. It is wrested from tenderness or playful-

1

IMPLICATIONS FOR WESTERN CULTURE

These primitive culture patterns contain many useful implications for our own A generation ago sex in Western culture struggled under the yoke of Victorian repression, which bore more than a superficial resemblance to Manus society. In the name of religion heavy prohibitions were laid upon sexual life with a force that threatened the security of family structure and kept women from achieving status A misreading of the gospels declared a natural function sin and put in its place the perversion of masochism. The development of biological science, together with the rise of psychoanalysis, gradually restored some measure of respectability to sex in our society. Indeed repression has given way to emphasis, reflected in a compulsive desire on the part of youth to go as far as possible.[523] The apparent over-valuation of sex, however, is somewhat spurious. It does not represent an elevation of sex as a biological impulse or of the erotic as an art The frantic quality that characterizes a great deal of sexual expression in our society is symptomatic of underlying ego-insecurity. People in our competitive, individualized society have an exorbitant need for affection and reassurance. It is this need for human response rather than a genuine sexual desire which leads them into the tense, clutching types of relationship so prevalent among us Sexual possession of another somehow reassures an individual and bulwarks his ego-defences, taking the place of a partnership based on mutual love. This was brought out clearly during the depression when sex afforded the one possible form of security available. Fortunately there is some evidence that this compulsive note is giving way to more natural and spontaneous sexual behaviour.[162, 438] Sex as a constructive social force that may improve the relations between men and women in our society is just beginning to be recognized.

Our primitive perspectives should help us to understand and improve our own attitudes toward sex. In the Manus we found our own mistakes caricatured and saw to what extremes of frustration they could lead From the Arapesh we

CHAPTER 9

Sex Typing of Social Role

THE CULTURAL MEANING OF MASCULINE AND FEMININE

EVEN more dependent on culture than the value assigned to sexual behaviour is the social role associated with membership in either sex. Out of the vast range of individual variation, societies select certain behavioural patterns and label them 'masculine' and 'feminine'. Stereotypes of class distinctions in sex as in the analogous class distinctions in race are perhaps not directly imbibed with the mother's milk but are just as surely and compellingly infused through all the familiar folkways that surround each new individual. Differences in clothing, manners, and activities of mother and father seem to be among the eternal verities of the child's life, and his own membership in the sex group, with all the privileges or handicaps entailed, are normally accepted without question. Indeed, to question the thoroughly ingrained attitudes and habits with which we have grown up is to try to lift oneself up by one's own bootstraps. To change one's crystallized conception of Negro, Jew, or woman is far more difficult than to change from fork to chopsticks. And yet intelligent social planning demands that we perform just such feats of mental acrobatics. We must get outside of our culture and view it as a visitor from Mars in order to determine what can and should be improved. We have already indicated some of the variety afforded by contemporary cultures in the evaluation of sex. Similar analyses with reference to social roles of the sexes should also serve to correct tendencies toward absolutism concerning this aspect of sex in the social order.

By far the majority of cultures differentiate the sexes in status and role· most of these follow the *natural* line of cleavage centring around the dominance gradient. There is no reason

could learn how to surround our children with the lush affection they need to develop unshakable feelings of security. The Marquesans showed us the emotional cost of erotic exaggeration. It was the Trobrianders who revealed to us potentialities for richer emotional development through the absence of warping sexual restrictions in the lives of growing boys and girls. It is against this background of primitive variety in sexual attitudes that we shall later approach a detailed analysis of sex in Western culture.

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to dispute the clear and consistent evidence already reviewed, showing dominance to be correlated with male sex hormones in somewhat the same way as are combs, beards, crowing, and second bass. But the case of dominance is not so simple. Social factors play an even greater part than hormones. The tendency for males to be ascendant in social relationships may be encouraged or discouraged. In most societies it is rewarded and, as a consequence, there has developed the stereotyped antithesis of male aggression – female submission. Although this is the most widely accepted dichotomy, it is not universal.

A 'Feminine' Culture. As Mead has shown in the primitive people she has studied, some societies do not draw personality distinctions along sex lines.[409] Among the Arapesh, for example, whose culture as we have seen is oriented toward the care of the next generation, men and women co-operate in the cherishing functions.[409, 410] The father's 'maternal' role approaches that of the mother. As a result, the warm, gentle personality developed in the typical individual regardless of sex embodies characteristics which, according to our standards, are essentially feminine. They do not deny a correlation between maleness and dominance behaviour but, believing it to be contrary to their central value, they set up the 'feminine' ideal for both men and women. In other words, we draw a sex line, stressing for women the traits that tie in with maternalism but disallowing them in men whose role does not ordinarily include nurturing the young but is concerned with achieving success in a highly competitive economy. Consistent with the failure of the Arapesh to dichotomize the sexes in personality, is their natural, unembarrassed acceptance of physical sex differences. Children who wear no clothing until four or five years of age early become familiar with the bodies of both sexes, and close physical contact becomes a matter of course. This playing down of sex and self results in a society of co-operative, secure individuals who pool their efforts regardless of sex in the mutual task of rearing wholesome children

A 'Masculine' Culture. In harsh contrast to the soft, peaceful Arapesh are their hostile, head-hunting neighbours, the

Mundugumors, whose aggressive individualism suggests the more unfavourable connotations of masculine in our culture.[409] The child is born and bred in an atmosphere of insecurity. He is an outcast from the start. Instead of representing a happy fulfilment, pregnancy is the acme of frustration. It means sexual deprivation, coupled with anger and repudiation on the part of the husband. Under such circumstances, the child is hardly a welcome stranger. From the moment of birth, he must struggle for his very existence. Suckling is apparently resented as intensely as gestation and, instead of providing safety and security as among the Arapesh, the situation bristles with tension. In order to get enough milk in abbreviated time and uncomfortable posture, the struggling infant has to develop a fighting attitude, seizing the nipple firmly and sucking fast and furiously. No less ruthless is the weaning process which consists of a progressive pushing away from the mother to the accompaniment of blows and cross words. Through this rude introduction to Mundugumor society, the new member receives the impression of a hostile world – an impression which will be repeatedly confirmed by later experience. This is as true of girls as it is of boys, and the girls consequently grow up to be harsh and aggressive like the boys, and in no way inclined to accept docilely the greater frustrations of the reproductive years that lie ahead. Thus in Mundugumor society the accent is on rugged individualism, and the personality with survival value is violently aggressive, ready to see and avenge insult and delighting at all times in display, action, and fighting. This pattern holds for women as well as for men, suggesting in both cases 'masculinity', but 'masculinity' distorted by emotional insecurity.

Sex Roles in Reverse. Arapesh and Mundugumor, though opposed in personality ideals, agree in making little differentiation according to sex. Differences that occur are among individuals – they are not sex-linked. Since it is possible for one society to 'go masculine', another to 'go feminine', there can be little question of the predominating influence of culture on sex temperament. If this evidence is not sufficiently convincing, we may turn to the third New Guinea tribe described.

by Mead in this connexion, the Tchambuli.[409] These people seem to reverse certain aspects of the roles and personalities associated with men and women of Western culture. Originally the men were dominant and played the part of warriors in their society. After the *Pax Britannica*, which outlawed tribal wars, they lost their traditional role and their function became largely decorative.* Since the economic support of the group depended on the women's fishing and weaving, female status rose, although not enough to free women from technical subordination to men. Nevertheless it is they who hold the purse-strings. A man's life, in contrast, is artistic rather than economic and, despite the fact that art is the supreme value in the society, its pursuit in the last analysis is dependent upon the stable economy which the women provide. At about six or seven years of age, girls are trained intensively in handicrafts and are absorbed into the sober, responsible life of the women. Meanwhile the boy receives no such special training for his future role. As a result, the woman emerges as the dominant, impersonal managing partner, secure and co-operative, while the man develops into a less responsible and emotionally dependent person, prone to petty bickering and misunderstandings. The women are tolerant and appreciative of the men, taking great enjoyment in their games and theatricals.

In keeping with women's greater social dominance is the rough homosexual play in which they indulge on festive occasions An unacknowledged tribute to the high regard in which women are held is a custom among young men of entering the women's group in semi-disguise and accepting the attention of the women. According to Mead this has important symbolic significance. She writes:[409, p. 256]

> ... The spectacle of women courting males disguised as females, expresses better than any other ritual act that I witnessed the complexities of the sex situation in Tchambuli where men are nominally the owners of their homes, heads of their families, even the owners of their wives, but in which the actual initiative and power are in the hands of the women.

* Linton, R., personal communication.

The sex 'reversal' manifested by the Tchambuli should not be taken too literally but rather as an indication that the concepts of masculine and feminine are culturally malleable. We should also bear in mind that the problem of sex stereotyping is complicated by the factor of emotional security. The Tchambuli man who had lost his traditional role manifests the less favourable characteristics which we associate with women in our society. The dependency and pettiness, however, have nothing to do with sex as such in either culture but are symptomatic of the emotional insecurity resulting from social subordination in both. Tchambuli women, on the other hand, manifest the self-assurance and grace in the performance of their duties, whether biological or social, which are normal accompaniments of emotional security the world over. The reason why they connote masculinity to us is that it is the male sex in Western culture that has been favoured with the opportunity for self-expression while women have been traditionally subordinated.

A contrasting situation may be found in Buka society, in which the women enjoy superiority in theory, the men in practice.[48] According to legend, man originally had big breasts and woman small ones, which they exchanged. Dissatisfied with her big breasts, woman obtained the coveted *upi*, a cylindrical headgear with a bulbous top worn by boys. After she had been given it, she hid it in the bush, but a man caught her with it and killed her. The legend symbolizes the struggle of man for his social rights

The woman in turn protests against the male domination. In the girls' menstruation ceremony, for example, the women cut down the banana palm and place it in front of the girls' house. This represents a displaced form of castrating the male, thereby retrieving the right or power which the women formerly enjoyed. The pattern of tension between the sexes is woven into the whole fabric of the culture

Reversal in sex roles so far as it affects parental function may be seen in the Manus.[406] Here the father is the tender, solicitous, indulgent guardian, while the mother takes second place in the child's affection. Little girls have no dolls and no

pattern of playing with babies. Mead reports that when she brought statues from a neighbouring tribe, it was the boys who accepted them as dolls and crooned lullabies to them. Sex reversal among these people, however, does not extend to other aspects of personality, and so the contrast with Western culture is less striking

The diversity of the pictures of sex and personality in these primitive societies can hardly fail to impress one with the importance of culture in their association. Among Mundugumor and Arapesh, certain traits which we call 'masculine' and 'feminine' are respectively selected as the personality norm for both sexes alike; in the Tchambuli, and to some extent in the Manus, certain traits are specifically assigned to one sex and disallowed in the other. These traits reverse certain aspects of the traditional sex ascriptions of our culture.

DEVIATIONS FROM STANDARDIZED SEX ROLES

Though undeniably important, the role of culture is necessarily limited by the raw material with which it must work. Culture can mould and shape; it cannot create. Some material is more plastic, more readily moulded into certain shapes than others. Some is resistant and breaks under the sculptor's chisel. In human terms, this represents maladjustment. As we have pointed out, the concept of the abnormal must be relative. The violent, aggressive individual may be a leader in Mundugumor society, but a total misfit among the Arapesh, and vice versa, the easy-going responsive person will be more readily assimilated by the Arapesh than among the Mundugumor.

As an example Mead cites the Mundugumor woman, Kwenda, who was discarded by her husband and destined to remain a grass widow because of her unaccountably soft and maternal ways. She even went so far as to refuse his request that she throw away her first child. Among the Arapesh, on the other hand, there was the violent Amitoa, who rebelled against the placid role of women and fought strenuously with her timid, impotent husband. Rather than suckle her children she tried to kill them.[409]

The range of individual variation is wide enough to account for conspicuous differences in ease of social channelling and consequently for conspicuous differences in adjustability to the standard cultural mode. In those societies which do not place a premium upon a single personality pattern but which go a step further and specialize their personality types by sex, the risk for maladjustment is even greater, for they pave the way to homosexuality. As Mead makes clear, the individual who has failed to identify himself with the prescribed sex-personality not only has the wrong feelings but the feelings of members of the opposite sex. Strong social pressures are exerted upon individuals to conform to the behavioural pattern of their sex and heavy penalties are levied for failure. Thus the person who finds his sex role too restricting to give adequate scope to his energies and interests is faced with the conflict of spending his life in the performance of distasteful duties or of running the gauntlet of social ostracism.

Ceremonial Sex Reversals. Cultures vary in the ways they handle deviations from the sex roles that they have standardized. As might be expected, there is no problem of homosexuality among the Arapesh or Mundugumor because these societies do not insist on a sex-temperament linkage. In the Tchambuli, however, we have noted that the men are granted the temporary privilege of dressing as women and participating in homosexual play during ceremonial occasions.

Another example of ceremonial sex reversal is found among the Iatmul people of New Guinea, whose elaborate rituals, or 'naven', are described by Bateson.[52] Though matriarchal in structure, this group prefers the male sex and despises the feminine role. Men are preoccupied with head-hunting and the production of spectacular displays, while the women are engaged in the routine tasks of food-getting and child-rearing. Male values are set upon pride, self-assertion, and harshness. The female attitudes, on the other hand, are governed by a sense of reality, resulting in behaviour which is self-effacing and co-operative. In matriarchal tradition, distinctive achievement by a man's young nephew on his sister's side is the occasion for naven, which serve to initiate the boy into

the masculine pattern. The outstanding feature of the ceremonies is an exchange of garments, or transvestitism, the men wearing women's apparel and vice versa. Curiously, this behaviour is differently motivated in the two sexes. For the boy, the point of the ritual is apparently to emphasize the shameful nature of the feminine role. To express contempt, the maternal uncle dresses himself in the most filthy of widow's weeds To add insult to injury, the novices themselves are called 'wives' and are bullied into the traditional wifely role of submission. Such caricaturing is designed to induce the proper distaste in the eyes of the young men. To Bateson, the fact that such elaborate precautions must be taken in order to ensure the accepted attitude suggests unanalysed and unacknowledged envy and fear of women.

The women's transvestitism has a very different meaning. The naven provide them with a coveted opportunity of placing themselves for the time being in the position of men. They dress up in male attire, borrowing the very best of feather headdresses and homicidal ornaments from the menfolk. Not only do they adopt these male ornaments but some behavioural prerogatives as well, such as entering the usually forbidden ceremonial houses and beating up certain designated relatives The adoption of these bits of male culture is especially befitting their participation in public theatrical displays which are so foreign to normal female values. On these ceremonial occasions, their behaviour approximates the proud and glamorous pattern of the men whose admiration for their transformed women helps to ease the tension between the sexes

Thus these initiation rituals among the Iatmul serve the double purpose of impressing the boy with the inferior and undesirable status of women and, at the same time, of giving the women an opportunity for self-expression which their workaday lives deny them.

Feminine Protest. In some primitive groups, where sex roles are sharply differentiated, escapes for those who find it too hard to conform may be institutionalized. For example, among many tribes of Plains Indians, masculine was identi-

fied with a warrior role, and the ability to stand any degree of danger or hardship was insisted upon. In these societies a man who found this pattern uncongenial might voluntarily give up the struggle and without seriously damaging social or self-respect become a *berdache*, donning the attire of women, imitating their voices and mannerisms, and following their domestic occupations.[81, 368, 476, 581] The man-woman, We'wha, who is described as the most remarkable member of the tribe,[581, p. 373] was the tallest person in Zuñi as well as the strongest both mentally and physically. An excellent memory was combined with outstanding skill in such crafts as weaving and pottery. The respect that 'she' enjoyed during life was expressed after death in granting her burial on the men's side of the cemetery.

It is quite the usual thing for the berdache to excel women at their own occupations. Among the Dakotas, for example, the greatest compliment to a woman is to say that she has 'fine possessions like a berdache'.[80] The status of the berdache, however, does not correspond exactly with that of women. They can support themselves by the male activity of hunting, and a little of the pattern of male superiority still attaches to them. In general, their social position, although not enviable, is better than that of a man who is a repeated failure as a warrior. This intermediate role provides the necessary safety valve for men who do not fit into the accepted male role, and it even vouchsafes them some measure of respect and prestige in society. Some may be homosexual, but the majority are not, and, although they do not marry women and seldom have sexual relations with them, they have been known to sire many children. Even when they 'marry' other men, there is only mild disapproval and this is directed against the husband who is condemned for trying to get a partner who will not only keep his house but also support him by hunting.

Masculine Protest. The berdache finds its converse in the 'manly-hearted' women found among the Blackfoot Indians of the North-west. Among the North Piegans they constitute a small group of women of wealth and high social position whose ambition, boldness, and eroticism contrast sharply with the

of cooking, making clothing, and caring for the children. But they sometimes act as healers, and it is admitted that they can on occasion work miracles Little girls are brought up with the idea of perfect virtue and are expected to be married not later than the fifteenth year. The typical woman is easy-going and submissive Deviations from the type may take any of four directions, the resulting exaggerations representing a special status role making the woman a privileged character. The situation is diagrammed in Fig. 7.[269]

The *Ninawaki*, which apparently corresponds most closely of all to the Piegan manly-hearts, is a woman in whom aggression has developed to the point where she behaves like a man,

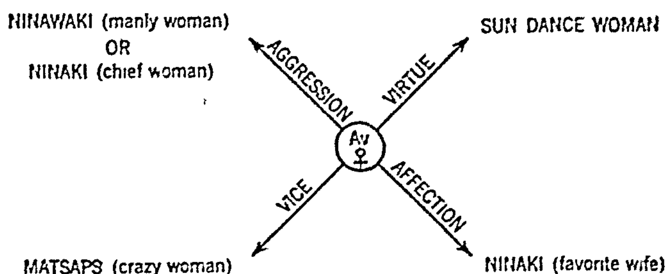


FIG. 7. Deviations from the Northern Blackfoot feminine role. (*Courtesy of L M. Hanks, Jr, personal communication*)

as in the case of Mrs Weasel Calf 'She's supposed to be a brave woman – a manly woman. She gave my girl Theresa that name so she could be brave too. She went out hunting with her husband. She's supposed to tell your mind and the future.' The evidence shows that these women are not bossed by their husbands but handle the household independently.

The *Ninaki* is a respected and able woman, capable of doing the job of chieftainship. In a second meaning, Ninaki refers to the favourite wife of a man As a special sex object, reminiscent of the Marquesan wife, such a woman is spared all the drudgery of the household. She has been groomed for this role since childhood and brought up with special privileges. The Pipe Woman, for example, had many horses, wore a weasel

head on her forelock, married with a big dowry. In marriage, she did little easy jobs and was allowed to play with toys. Her husband's brothers and sisters erected the tepee and made the beds for her while she just sat and watched. Obviously only a wealthy man could afford to have one of his wives reserved for him in this way.

The *Matsaps* is a 'crazy' woman who dashes around doing sexy things. Mrs J. K. is a case in point: 'She used to be fighting all the time, quarrelling with the other women (over their husbands); people didn't like her. She made trouble with all the husbands.'

The *Sun Dance Woman*, on the other hand, represents the extreme of virtue. She can never be unfaithful to her husband nor remarry after his death. She is rewarded by the rare honour of giving the sun dance.

By providing these special statuses, the Blackfoot recognizes the wide range of individual variation in women and makes it possible for the atypical to escape the dull domestic routine which is the lot of her normal sisters.

Permanent Sex Reversal. In the societies we have considered, provision has been made for exceptional individuals who are miscast in the conventional sex roles. We have also discovered groups that allow opportunity for a temporary exchange of roles through ceremonies. The Mohave Indians go even further than this, granting special status and permitting permanent reversal of roles in the cases of certain homosexuals.[174] As in the manly-hearts, only members of prominent families may claim the special privilege of repudiating their sex. Although there is no evidence of genital abnormalities, homosexual tendencies appear in some boys and girls as they approach puberty. At this time, such boys may express a distaste for the warlike pursuits of Mohave men and an attraction toward feminine occupations. They refuse to play with masculine toys and to imitate the riding, hunting, and love-making of adult men. Instead, they play with dolls and ask to wear skirts. Girls with homosexual trends behave in the reverse manner, throwing away their dolls and refusing to shred bark or to perform other feminine tasks. They chum with boys,

adopt the masculine ways of the group, and prefer breechcloth to skirts.

Since the transvestite is regarded in a somewhat unfavourable light, families accept these symptoms with resignation rather than joy and prepare for the elaborate ceremonies that will mark the change in the individual's sexual status. The male transvestite, *alyhâ*, assumes the female role not in dress and name only but, like the berdache, he also learns to imitate the behaviour, gestures, and voice of the opposite sex. Such people marry men who are often bisexuals but otherwise normal, assume the female part in intercourse, and despite anatomical normality, insist on a female genital nomenclature. One may intimate that 'her' penis is not a clitoris only at the risk of being beaten up by genuinely male muscles. Alyhâ go so far in carrying out the illusion of their femininity as to imitate menstruation by inflicting wounds upon their thighs each month and insisting that their husbands submit to the system of taboos surrounding this function. Similarly, they fake pregnancies by stuffing rags and bark under their skirts in increasing quantities to make the abdomen protrude. The deception terminates in a pseudo-parturition and the claim of stillbirth.

Corresponding reversals in role are made by girls who wish to become *hwamê* and play the part of men. Although denying menstrual functions in themselves, they submit as husbands to the taboos of menstruating and pregnant wives. In intercourse they assume the male role and in cases where their wives were pregnant before marriage, they may claim the paternity of the child. Moreover, it is their privilege to sit among the men and boast of their wives' sexual assets. They are, however, denied the opportunity of going on the warpath and fighting like real men for their wives. This social disadvantage is counteracted to some extent by their exceptional industriousness which makes them preferable to a lazy, shiftless man.

The sex reversals represented in this culture as alyhâ and hwamê are so thoroughly accepted by the group that the individuals are always referred to by the reversed pronouns, 'she'

and 'he' respectively. Although not encouraged, homosexuals are accepted on a 'they-cannot-help-it' basis. Again, as in the case of the berdache, it is the spouse who has to bear the brunt of the teasing which sometimes precipitates divorce.

By granting recognized status to sex deviates, the Mohave wisely localize the disorder and prevent its infecting healthy areas of their society. At the same time, the individuals in question, instead of being outcast, are allowed to participate in the work of the group and to contribute to its welfare.

Cultures that fail to provide acceptable outlets for sex deviates, and at the same time stereotype personalities along sex lines, pay a heavy price in homosexuality. Especially unfortunate in this respect is Western culture with its rigid sex typing and its intolerance for the deviate. So much pressure is placed upon those who cannot conform that many break down. The conflict of living in a homosexual world and attempting to keep up normal appearances becomes insupportable.[289] Not only is the individual caught in a serious conflict, but he cannot seek help without running the risk of arrest, although incarceration is the worst possible treatment for this difficulty. Since the sex criminal is a neurotic, his complaint should be handled psychiatrically.[466, 513, 637, 675] It could be prevented by a reformulation of sex roles since a large share of sexual inversion can be traced to the false assumption that a dichotomy in sex temperament is somehow essential and desirable. Our cross-culture comparisons can hardly have failed to show how large a part social factors play in moulding sex temperaments. If, in place of the artifact of social sex role, there were substituted the opportunity for each individual to develop his potentialities without regard to sex, we should expect to have a richer society in which each member felt free to follow his particular bent without being branded 'masculine' or 'feminine'. We should also have a society in which homosexuality approached the vanishing point.

CHAPTER 10

Changing Sex Roles in Western Culture

PAST DEVELOPMENT

OUR comparison among different cultures showed the importance of social setting on sex roles. In order to plan for the future, we need the insight into sex roles in our culture that can come only through historical perspective. Fortunately we have available Goodsell's[242] and Stern's[578] excellent summaries to guide us in evaluating historical material. In preview, we may point out the absence of a steady trend. What we shall actually find is variability from time to time depending on external circumstances.

Antiquity. The family in the West has always been organized along patriarchal lines, and different times and places have merely varied that basic theme. In ancient Athens, for example, the husband exerted the greatest power over his family. Not only did his wife's dowry and earnings belong to him outright but her person also came completely under his control Among the Ionian Greeks, women were regarded as a distinctly inferior order of beings, incapable of being companions of their husbands, and they were denied the training and education that would have made them capable. At the age of seven the little boy was sent to school to receive a carefully planned education The girl, on the contrary, was kept at home and given no instruction except in the homely arts of spinning, weaving, embroidery, and cooking. Having grown up in seclusion, apart from men and remote from all developing social influences, she could hardly emerge at sixteen, ready to be the companion of an experienced man twice her age whom she may not have seen before her wedding-day. Indeed she was expected to continue her seclusion after marriage and even in her own home was confined to women's apartments The words of the poet, Menander, were literally true: 'The life of a respectable woman is bounded by the street

cally independent of her husband, who had no legal power over her conduct. Patrician matrons could afford slaves to perform the household chores while they were free to attend circuses, theatres, and banquets, to beautify their bodies, or to cultivate their minds. Many became writers of verse, literary critics, students of science, and even active forces in politics. They even had the temerity to challenge male prerogatives and thereby to bring down upon themselves a storm of protest from such leaders as Cicero, Cato, and Juvenal Goodsell makes the significant comment that the woman of Imperial Rome had more in common with the twentieth-century American than with her countrywomen under the Republic. The analogy becomes even more apt day by day as at this writing American women are assuming increasing responsibilities while their men are at war. But it should not be forgotten that women did not maintain the status they had achieved. There was no straight line of progress from the days of the Roman Empire to the present. Women have gone one step forward and two steps backward throughout the history of our culture, and unless we are aware of the determining social factors there is no guarantee that they will hold their gains at present any more than in the past.

Middle Ages and Renaissance. The Middle Ages ushered in another cycle of changes in the social roles of men and women. The freedom achieved by the Roman woman was denounced by the early Christian fathers as out of keeping with the ideal of sexual asceticism, and women came to be held in very low esteem. Paradoxically, the convent in early Christendom became a haven for a few gifted unmarried women from the social restrictions which usually surrounded them. Behind the cloistered walls the woman with initiative found opportunities to express her leadership in scholarly works as well as in administrative functions. The lady abbess was virtually a baron – an overlord of an immense property which she held directly from the king.[489]

Through marriage a woman came theoretically under the control of her husband, who had the authority to force obedience by physical means if necessary. In practice, however, she

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intercourse than in the Middle Ages. They were, however, still held in essential subjection to men. Marriage was the only career open to them, and obedience to the husband the order of the day.

Modern Times. Coming down to modern times, we find further fluctuations in the position of women according to the general social conditions prevailing. At the opening of the seventeenth century, society expected women to take an active part in the national life and, as they had done on similar occasions in the past, they rose to meet the new emergency.[577] The struggle for existence in those turbulent times produced a kind of pioneer psychology in both men and women of the emerging middle class. Although the wife was still technically subject to her husband, she was his lieutenant rather than his slave and was trained in some skill that served as an economic asset. In turn, the tradesman considered it his duty to be well informed on domestic affairs. Marriage took on the air of partnership and women were allowed to display qualities of courage, initiative, resourcefulness, and wit which had been denied expression during the long eras of male domination.

The Restoration was less kind to its women. Before the century was out, they had suffered a serious setback. With the rise of capitalism and the competition for jobs that it entailed, women no longer shared directly in production and had no interchangeable basis for support. Many functions were taken out of the home without allowing the women to follow them. The new order even failed to recognize women's age-long priority in the fields of healing and teaching. Raised professional standards, depending on the higher education denied to them, put these occupations beyond their reach. Thus they were left with empty hands, held captive within the four walls of their homes. No wonder their physiques and personalities took on a prison pallor in comparison with those of their vigorous grandmothers. As in all eras, class lines cut across sex lines, with the result that women of the aristocracy enjoyed privileges denied the men as well as the women of the submerged groups. Within each class, however, women have always been at a disadvantage in comparison with men. These times

were no exception, and among the poor they were exploited as cheap labour for profit-making purposes, thus indirectly contributing to the unearned leisure of the rich. Their status within their own families, however, improved because of their economic help and the mutual hardships which demanded a rough-and-ready equality between man and wife.[579] The restriction of women's activities in times of reaction suggests a parallel between their role in ancient Greece and under early capitalism.

By the eighteenth century the deterioration of woman's status was complete. The ideal of feminine charm included passive docility and clinging dependence on men The practice of female parasitism spread through all except the lowest classes until work came to be regarded as a misfortune and disgrace instead of a source of dignity and independence. Meanwhile in the colonies, despite the autocratic legal powers of the father and the theoretical subjection of women, the harsh conditions of frontier life proved to be a levelling influence which gradually undermined the patriarchal tradition and raised the status of wife and child within the family.

During the nineteenth century women gradually became more articulate concerning their rights and responsibilities. Although Victorian ladies led extremely sheltered lives, with fainting and pining away still the vogue, individualism was in the air. Efforts of particularly enterprising women like Lucy Stone launched the early self-consciously militant 'woman's movement'. Since those days women have gradually been freed from the onus of legal dominance by their husbands and have had political and educational opportunities extended to them. That they have failed to take full advantage of these opportunities may be attributed to the uncertainties and ambiguities of their position in contemporary life.

This brief survey of the changing roles of men and women during the development of Western culture reveals their dependence on the general social setting. Within the framework of patriarchal family structure, the position of women has fluctuated. Because of the equalizing effects of adversity, which we have just noted, changes have always been less

conspicuous at the lower than at the upper extremes of society. The poor women have had to share work and hardship with their men in all eras It was the women of the aristocracy whose individuality and independence waxed and waned according to the general social climate. In times of liberal humanitarian movements, patriarchism has declined, women have been appreciated as people, and their range of influence has been extended. In times of emergency their necessity has been unquestionably accepted, and they have always proved equal to the task. But no matter how bright their prospect in times of opportunity, they have always unconditionally surrendered and retreated into the home at the first sign of reaction.

CONTEMPORARY CONTINENTAL TRENDS

The trends we have noted are nowhere more beautifully illustrated than in contemporary societies. In authoritarian groups with their social hierarchies the male-female gradient is steepest. Power is vested in the males, and women together with children and animals are subjugated. Male homo-erotic attachments flourish because men enjoy the higher social ranks while the subordinated women are despised[224] Such was the German tradition before the First World War. That it is cultural rather than racial is indicated by the change that came with the changed social pattern of the Weimar days. No more inspiring picture of a class rising victorious in its struggle against oppression can be found than the women of Germany under the Republic. As a result of the vigorous *Frauenbewegung*, women were enabled to share with men in every phase of life.[257, 487, 635] The universities welcomed them and in turn opened up all the professions. This represented an amazing transformation over the situation that held during the nineteenth century. Under the Republic, *none but the National Socialists* had the temerity to support the Kaiser's KKK slogan of *Kinder, Kuche, Kirche*, for women. Indeed her new status and role seemed at last permanently entrenched and lured even the most discerning into such wishful thinking In view of subsequent events, the confidence expressed in the following

quotation[635, pp. 262-3] acquires a poignancy never dreamed of by its author writing in 1933:

Not if Hindenburg and Von Schleicher and Hitler should decree a return to the old order tomorrow could these castes and social distinctions be wholly restored. ... Least of all could they restore women to their pre-war status: the current of fundamental world change which has overnight enfranchized women in Spain and freed the women of Turkey from the veil, the harem, and legalized polygamy, would alone prevent any re-establishment in Germany of a system which is as dead as the kingdom of the Pharaohs.

Under the Third Reich the incredible happened. Reaction in the social structure as a whole undermined the progress women had previously achieved and led to a baser degradation than they had ever experienced in the history of Western civilization. Her world as defined by Hitler was restricted to 'her husband, her family, her children, and her house.'[295, pp. 287-8] All women were to be fitted into a single mould on the assumption of a universal maternal feeling and unlimited wifely docility.[337] Her primary role in the New Order was to breed potential soldiers. Her education had to be directed toward this goal and therefore differed from that of boys. As in ancient Sparta this involved a maximum of physical, combined with a minimum of intellectual, training. In an effort to raise the birth-rate, anti-contraceptive legislation was introduced.

Women were regarded as the source of nourishment not only in their capacity as breeders of German men but also as tillers of German soil. They were to be strong peasants as well as strong mothers. As part of the double training for the role of housewife and peasant, compulsory labour camps were instituted. They sent out young women to help with heavy work on the farm in the belief that 'Folk-centred labour service is the best political education for girls as it teaches them the true mission and place of the German woman, the blessings of work in close relationship to children, animals, and nature.'[326] Actually this amounted to putting all German women in the position of the virtual slavery which applied to the domestic servants of an earlier era.

For the unmarried woman only those occupations were open which were deemed appropriate to the Nazi conception of 'female nature'.[102] During the depression, professional women suffered heavily through loss of position and opportunity although their proletarian sisters as in other times and places were once again exploited as cheap labour.[334] With the onset of the 1939 war, the wholesale discharges had to be checked and the movement reversed for the duration The war, however, was no more than an armistice in the fight against women. Even under emergency conditions the employer was not permitted to forget sex differences in social roles He was advised to bear constantly in mind that, while employment of women was indispensable, they were not naturally adapted to life of that sort. Their work should be simple and mechanical. Moreover, women should be under male supervision because they take orders more readily from a man.[28] Demobilization would presumably put an end to employment of female workers engaged to replace men.[29]

Under the Nazi regime, the romanticizing of male friendship to which we have referred was exalted at woman's expense. The glorious role of man in contrast to the humble role of woman was that of a warrior like the heroic Siegfried. As a member of the *Hitler-Jugend*, the cult of the Führer was instilled in every youth. According to this notion, the state is founded on a male league in which warriors are linked together by loyalties nobler than the emotions men feel for women and more nearly resembling the worship of a god. These emotions were often expressed in frank unsublimated homosexuality which might even be encouraged in its own right. Decadence, however, would result from the participation of women.[96, 551, 634]

This glimpse of changing roles of men and women in Germany may suffice to show their dependence on the general social context The democratic climate of the Weimar Republic permeated every area of life, expressing itself in an equalitarian relationship between the sexes. Autocracy under National Socialism reversed this tendency, vesting authority in men and lowering the status of women.

An even more extreme differentiation between male and female is found in Japan, where Orient blends with Occident. Gorer's[243] analysis of the Japanese character structure through personal interviews with adults living in the United States throws important light on the problem of sex roles From earliest childhood, different demands are made of boys and girls Girls must learn to express passivity through appropriate gestures, postures, and language. 'Like a boy' is the worst insult a girl can receive. But there is no converse for the boy, because he is regarded as so superior to any girl that there is no equivalent for sissy. The boy must find his place in the dominance hierarchy. Toward his father, elder brothers, and teachers passive compliance is expected. Toward those lower in the scale he may display aggression. This includes all women without regard to age or social status. Toward his mother, sister, or nurse there are no limits to the violence he is permitted up to school age. He may with impunity kick them, bite them, or break their lovely hair ornaments. Although the tantrums are curbed after he starts to school, aggression toward women is always rewarded. Woman's role is to service men by providing physical satisfactions and to yield to their demands.

Contrasting social structures bring with them contrasting patterning of sex roles The Russian revolution represented the overthrow of authoritarianism under the tsars and an attempt to concentrate power in the hands of the workers. The aim was to socialize industry and to raise the standard of living of all workers, women as well as men [631] Women were to share equally in the privileges and responsibilities of production. Despite a long tradition of subjection and much resistance, even from the women themselves, the main objectives were achieved. The new freedom for women was attained not through a feminist movement fighting against men but in the course of a much larger struggle – a struggle of both men and women for a new way of life.[663] It was the men who supported the women and spurred them on until they not only became a vital part of the movement but even rose to the highest positions.[200, 291] Under a system in which one must work to live,

them and found them strong. No small share of the credit for the splendid example they have set the world is due to the women who have had to man the vital industries and have even accompanied their men to battle. What the post-war picture will be is difficult to predict. Rumours of reaction, of sending women back to the home and of abandoning co-education in favour of differential training, may be based on the need to rebuild the depleted population. It is also conceivable that these disquieting rumours may represent a reaction of both sexes from the over-emphasis on power and a longing for the softer moods of peace. Unless the economic structure reverts to capitalism, we need not fear a lowering of women's status.

THE AMERICAN SCENE

Turning to pre-war middle-class America, the authoritarian form was retained although democratic influences were gradually changing the content. A clear portrayal of the situation appears in the Lynds' cross-section of the typical city, Middletown.[372] Here as late as 1924 we find men and women widely separated in social role. Marriage is a blend of the tradition of family contract and romance. It is presumed to result from an unanalysable mystery. Behind the mystery, however, lies tactful direction of designing parents. Upon marriage, the young couple make a home of their own, but the patriarchal mould survives in the woman's exchanging the name of her father for the name of her husband. This is reminiscent of the Roman Republic when the girl passed from the hand of father to that of husband. More reminiscent of those ancient times are the lack of companionship and community of interest between husband and wife. In mixed social gatherings, the men and women frequently gravitate apart, or the men do most of the talking while the women lend a respectful ear. This social sex distance is the product of a differentiation in roles. In short, the husband provides a good living while the wife provides a good home to live in. The Lynds point out that the worlds of the two sexes constitute something akin to separate subcultures. The woman's world

lies within the household and involves care and teaching of small children, always with male authority in the background.

The sharp cleavage in sex roles has led to a discounting of the broad socializing values of education for women. As one Middletowner expressed the typical attitude: 'The thing girls get from high school is the ability to know how to choose a "real one" from a "near one".' It has also led to the assumption that men and women must be very different kinds of people. Men are considered stronger, bolder, more logical and reasonable, but as needing coddling and reassurance. Women, on the other hand, though more delicate physically, are presumed to be stronger morally; they are purer, more refined, more sympathetic, and more sensitive. The prevailing attitude accepted by women as well as men is beautifully summed up in the motto of the local federated women's club: 'Men are God's trees; women are His flowers.' It is hardly to be doubted that men and women, subjected to such totally different cultural influences, are moulded into two totally different personality patterns. The fallacy lies in the assumption that such differences are intrinsic in the biology of sex and therefore justify differential treatment, when actually they *result* from such treatment.

A decade after the original study of Middletown, to all external appearances, the social roles of the sexes had not changed.[379] Dorothy Dix was still extolling the tradition of subordination for women. But the depression was seriously threatening the old tradition by preventing many men from providing for their families and making it necessary for many wives, especially among working-class groups, to contribute to the family earnings. Under such circumstances, the rigid dichotomy of sex roles could not be maintained and we find more participation of men in the home and of women outside it. Aside from the depression, there was some trend away from tradition. In keeping with smaller families and a rise in both physical and psychological standards of living, women's place was actually less exclusively confined to the home and careers were opening up alternative paths. Significant of this tendency was the growing talk among high-school girls of

working after graduation rather than 'just marrying and settling down'

In spite of this shift in emphasis, the basic pattern remained unaltered Until the Second World War, the male was still being trained for dominance while the female was oriented toward domestic and service roles. What was true of Middletown was true with local variation of the middle class throughout America. The sex dichotomy was transmitted throughout the culture by an extensive system of differentiation to which, as we shall see in the following chapter, the developing child was exposed with his first breath.

The gentle, peaceful natures of the Arapesh have been in part attributed to their prolonged nursing, while Mundugumor hostility may equally well be traced to early feeding frustrations. In so far as differences in mature personality are associated with infantile sucking activities, it is most likely that the important psychological frustration is not the withdrawal of the nipple as such but an accompanying withdrawal of love and security.

Excretory. With the introduction of bowel and bladder training, the infant's attention is necessarily concentrated on the structures and functions of excretion. Again, it would seem as though the intrinsic satisfactions and frustrations associated with these processes were less important to his psychosexual growth than the social rewards and punishments meted out to him for his performance Any ramifications to his adult personality structure should be sought in this area rather than in the individual's preoccupation with excretion as such. Whether the child will develop a healthy, natural attitude toward these biological functions depends on the attitudes prevailing in his immediate environment. This point was convincingly brought out in a study on mixed groups of three- and four-year-old children attending nursery school [182] Careful observations were made in the dressing-room. In most cases excretory behaviour was matter of fact, with a refreshing absence of any sense of impropriety. Certain cases of excessive modesty, however, could be attributed to pruderies observed at home. A striking instance of repressive environment concerned a game of rectal temperature which became a fad among the younger group. Adult disapproval enhanced the fascination, which, however, quickly waned with casual treatment. The *older* group of children who had absorbed the general cultural taboo adopted the game and secretly indulged in it with unabated zest In primitive groups which allow natural expression to natural functions, such a pastime would be unlikely to occur. We may recall that among the Arapesh where children wear no clothes until four or five years of age, physiological functions are accepted without shame or embarrassment. Thus we find that even the

importance attached to feeding activities among these people focuses interest on the lips rather than the genitals.[409]

Before proceeding to a consideration of the more socialized forms of sexual behaviour, we should point out the possibility that all forms of auto-eroticism, whether oral, excretory, or genital, probably represent an important phase of psychological weaning. Kardiner's analysis of the Marquesans, a group remarkably free from frigidity and impotence, led him to the conclusion that auto-erotic practices in the young child help him to liquidate his dependence upon his mother and to build up his confidence in himself.[319] Such observations suggest the need of a re-examination of attitudes current in our society.

SEXUAL SOCIALIZATION

Family Ties. As soon as mental growth permits, the child awakens socially and begins to notice other individuals. The satisfactions that were once exclusively associated with the functioning of his own body become transferred to those who minister to his bodily needs. Because of the closely knit character of our family organization, no one can deny the importance of the emotional bonds formed in childhood. It is in the family that the child first learns to love as well as to be loved.[97] Here he makes his first social overtures, and the success of these early relationships determines to a large extent the success of later relationships. The danger in our society lies in their becoming emotionally too restricting. According to Freud, an important step in sexual development consists in the child's attachment to the parent of opposite sex.[184] This is assumed to leave the like-sexed parent in the anomalous position of being hated as a powerful rival and at the same time loved as an object of emulation There is little positive support for this Oedipus myth in current data on normal children. Unfortunately the scientific evidence is based on children five years of age and older when, according to Freudian theory, the Oedipus attachments become repressed. Preference for the mother on the part of both boys and girls has been revealed in a variety of ways. She is given top rank as companion on a

which this first experience was forgotten might possibly be attributed to repression In the light of the positive evidence presented, however, it seems much more likely that the forgetting was an index of the casualness with which the information was received. Freudians, it is true, cite contrary material indicating the expected castration fears and penis envies.[361] Whether such cases more readily find their way to the analyst's couch or whether the analyst in his enthusiasm for Freudian theory inadvertently suggests to his young patients the anticipated complexes, is an open question.

The only evidence of emotional conflict among the groups of normal children under investigation could be traced to adult attitudes and had to do with naming the various parts of the body. Apparently the facts of life were accepted naturally enough by the child, but the symbols representing them carried an onus of shame and led to embarrassment.[146] The symbols usually assigned to the genitals are so special and different from the commonplace names of other parts of the body that they acquire a secret and sinister atmosphere which is communicated to the child. But perhaps even more important than their intrinsic mystery is the unverbalized sense of sin which is imparted to him along with the words.

The very great harm parents can unwittingly do their children by inculcating faulty sex attitudes is strikingly illustrated by Woolley's staircase phobia in a girl of three:[668]

> The parents, thinking the child too young to understand, had failed to discuss the birth of a new baby with her. Puzzled and disturbed by the event but feeling that she must not ask questions, the little girl suppressed her anxiety as well as she could. Each day as she left the hospital after visiting mother and baby, the first object she encountered was the stair railing, which came to symbolize the whole situation and to arouse her fear. A similar staircase at the nursery school produced the same response, thereby attracting the teachers' attention to the phobia. With the parents' co-operation, the child was given the information she so badly needed and the fear disappeared.

A more recent example of a similar sort may be found in the story of Anna, an eleven-year-old Swedish girl whose

expressed complaint was headache and school failure[606]* Analysis revealed the following:

Anna's natural curiosity about the origin of babies was not satisfied because of her parents' disapproving attitude. This led to her brooding over sexual matters, especially over the idea of her parents' living together. Headache developed and was interpreted as a punishment for and protection against her sexual curiosity. In fact all curiosity was repressed because of its possible connexion with sex Hence in spite of her intellectual brightness she began failing in her studies. She hated her schoolmates because they did not need to repress their sexual interest but were free to primp, flirt, etc. After analysis, in which the mechanism of her difficulties was made clear, her headache disappeared and she was able to take an interest again in things other than the sexual.

Early Sex Aggressions. Many children experience sexual aggressions by adults, which have usually been assumed to endanger normal development[339] In a study of sexual behaviour in a large group of normal and abnormal women no causal connexion could be traced between the abnormality and the early sexual episodes. Apparently aggressions occurring before puberty did not predispose the individual toward the development of mental disorders in adult life[349] It has been found, however, that they sometimes leave in their wake negative attitudes toward sex which are unfavourable for marital happiness and in certain cases they may lead to homosexuality.[202, 259, 285]

Because of the importance of the immediate family to the young child, incestuous aggressions, at least, might be expected to constitute a serious threat to later adjustment. Again scientific evidence fails to reveal the universal damage anticipated. Whether incestuous attacks produce traumatic effects or not seems to depend on the personality of the child at the time of the incident.[349, 562] Provided that he feels basically wanted and loved he can absorb a great deal of shock.

In general, the available scientific data tend to underemphasize the importance of prepubertal sex aggressions for later adjustment. Indeed, in some cases, far from being the

* Translated from the Swedish by Miss Ingegerd Anderson, Connecticut College

pitiable victim of sexual attack, the child himself has acted as aggressor, apparently deriving positive satisfaction from the experience with no trace of guilt or anxiety.[75]

EMERGING SEX ROLES

Awareness of Sex Differences in Social Role. Along with his awareness of genital differences the little child becomes aware of what is expected of him as a member of his sex group. Sexual status and colour caste share the distinction of being the only lifelong forms of rank in our society.[166] Which one predominates depends on the structure of the population under consideration. Among school children in an Amerian border state where race consciousness runs high, the racial barrier proved more powerful.[299] On the other hand, sex cleavage was found greater in a Brooklyn public school where the Negroes outnumbered the Whites. In this situation a white boy almost invariably preferred a coloured boy to a white girl even in classes containing only one white boy and girl. In most classes the sexes formed virtually separate groups.[161] Comparable results were recently obtained in a study in which the relative importance of race, sex, and facial expression was determined. Again the racial factor was secondary to sex in determining the choice of playmate.[281]

Sex Models in the Home. Sex typing of personality and privilege becomes an important means of social control, and infractions of the code are severely punished.[166] The individual is trained to his sex role from the moment of birth when girls are placed in pink, boys in blue bassinets. Awareness of sex-appropriate conduct makes its appearance early in life through observation and imitation of models in the home.[204] Some unpublished observations by one of the writer's students[424] on a nursery-school group show an increasing awareness of sex roles between the ages of two and three. Through picture choices the older children revealed a greater acceptance of father as a man of business and in the dominant role within the family. They were also aware of the inappropriateness of boys' playing with dolls, which the younger group failed to recognize. An indication of the importance of cultural

influences was the approval of the working mother, which presumably reflected the wartime pattern

Sex models in the home must be appropriate *as long as society persists in stereotyping sex roles.* Domineering mothers and ineffectual fathers are likely to produce a younger generation of tomboys and sissies.[204, 286] Deviant sexual orientation in later life may originate in the child's inability to identify himself with his like-sexed parent.[258] Absence of the father or fear of him frequently results in a passivity in boys and a tendency on their part to imitate the attitudes, interests, and manners of the mother Converse attachments may be built up in girls. In either sex, cross-parent identifications are often the cause of maladjustment in sex role and heterosexual inadequacy in adult life.[464, 465] Many of the psychological factors we have considered are illustrated in the following case of an adult male homosexual.[49]

Q. W. A forty-eight-year-old successful musician, living alone in New York. His father was a businessman who was a stern disciplinarian, stressing religion and giving Q. W. little companionship. His mother died while he was a young child but his grandmother, an affectionate, motherly person, took her place His homosexual trends appeared at an early age. He was a typical 'sissy', preferring to play with girls and liking to dress up in their clothes. He decided on a musical career through the influence of a woman teacher. He uncompromisingly rejected the idea of becoming either a businessman or a minister, which represented two outstanding values of his father.

His first overt homosexual experience occurred during his musical study in Europe. Since then he has had a number of similar affairs, always with upper-class people He is a charming personality, attractive to both men and women. At one time he became engaged to a woman but had to break it off because of his inability to make the appropriate emotional response.

Q W.'s sexual inversion is reflected in his interests and in his scores on various tests. His M-F score is closer to the female than to the male average Moreover, his verbal ability is unusually high and is expressed in voracious reading Artistic interests are indicated by his high rating on aesthetic values. On tests of emotional response, he proves to be unstable, introverted, submissive, and self-conscious.

Professional success has counteracted to a large extent the ill

effects of his sexual inversion, so that he has been able to make a satisfactory life adjustment.

Not only does the family have the responsibility of providing the child with appropriate sex models, it also provides him with his first tryouts of his sex role. Frank points out that the little boy should be able to play up to his mother and have his attentions appreciated. If she makes him feel that the male's interest in sex is repulsive to women, she may block his psychosexual development. On the other hand, if she is possessive she may also arrest his development by preventing him from reaching out toward other members of the opposite sex. The girl in turn learns how to be womanly through her early relationship with her father. His approval and admiration of her as a young woman help her to take a positive attitude toward her sex membership.[213] Irreparable harm can be done by disappointed parents in their futile attempts to thrust on the child the role of the other sex. Little boys whose baby curls are kept too long or who are dressed up in sister's clothes for the amusement and admiration of female relatives are potential recruits for the army of home-made homosexuals. Analogous misdirection is an even more frequent occurrence in the case of girls, owing to the higher valuation placed on males in Western culture. This was the situation in which Nancy grew up:[318]

Her father was an athletic coach who had wanted a son rather than a daughter. Her mother had not wanted any children and resented the handicaps of motherhood. In this family everything desirable was on the side of being male Naturally Nancy preferred the idea of being a boy and felt greater warmth from her father, although she needed actually to be a boy to make this complete. She wore shorts, insisted that other children call her 'Bill', and refused to play the role of mother or little girl. As a result of her attitude, she found herself in conflict everywhere.

Social Training for Sex Role. Early successful family training is greatly reinforced by the sex typing controls to which the child is subjected in school. His prestige depends on his learning the sex appropriate code in the various areas of clothing, hair-dress, gait, voice, language, interests, and behaviour. At

an early age the little boy's interest in the world of action is reflected in his preference for trains, cars, horses, and blocks, in contrast to the girl's fondness for beads, dolls, and house[82, 478] Self-expression in plastics revealed the same sex differentiation at the nursery-school level. The boys' products ran to tools, construction, and transportation while for the girls, people, furniture, dishes, and food predominated.[421] Comparison with other groups reveals the cultural origin of such sex differences. We may recall that among Manus children it was the boys who played with dolls In our culture, interest in dolls is sometimes persistent in the boy and must be brought in line with acceptable masculine standards through interpretation Zachry cites the case of one little boy whose desire to play with his big sister's discarded dolls would not be downed In this crisis the mother hit on the solution that he might play father to them Thereupon he was overheard addressing them as follows.[696, p 78] 'Children, I'm so glad your mother is dead. Now I can have you all to myself'

Sex typing of personality parallels this sex typing of interests. Hattwick, in confirmation of earlier observations,[244] found that boys of nursery-school age were more extroverted, aggressive, and difficult to handle in comparison with girls.[280] In evaluating these results it is very difficult to determine how much weight should be given to constitutional sex differences in ability to mobilize energy in comparison with cultural sex differences in expected behaviour. The marked shifts in pattern at different age levels suggests a preponderant influence by social factors.

During the early school grades, the 'real boy' appears to be good at games, is popular, is not easily scared, and may even be bossy at times The 'little lady', in contrast, is also a good sport, is popular, but is not especially proficient at games. She sits quietly in class and, above all, does not quarrel.[380] As the individual matures, certain features are played up and others down. For example, being good at games was found to increase in importance for boys at the first, third, and fifth grades, while being quiet had almost dropped out as a desirable masculine attribute by the third grade.[381] These shifting

NORMS OF PSYCHOSEXUAL DEVELOPMENT IN CHILDHOOD

The Question of a Latency Period According to Freudian theory, which has greatly influenced thinking in the field of sexual development, the curiosity of early childhood gives way at four or five years of age to a dormant period which lasts until a little before puberty. This theory seems to be without biological basis, most of the available data pointing in the direction of uninterrupted sexual development. Recent colorimetric determinations of children's urine reveal a progressive increase of androgens and oestrogens according to age and general physical development, reaching a peak at puberty.[437] The only evidence of sexual indifference is more apparent than real and may be directly attributed to socially instituted sex segregation.

An early attempt to apply scientific method to the investigation of sexual development was published in 1902.[74] On the basis of a large number of reports, childhood was divided into two main stages. The first extended from the third to the eighth year during which there were many spontaneous demonstrations of affection between boys and girls. Hugging, kissing, the exchange of gifts, and instances of genuine self-sacrifice were common occurrences The second phase, beginning at the eighth year and lasting until puberty, was characterized by shyness, modesty, and the absence of overt pairing The tendency to pair off was present, however, but to avoid teasing it was expressed in secret. Gifts and notes were delivered by intermediaries. Such indifference is obviously the result of social conditioning rather than biological maturation

In close agreement with these findings are those of a modern experiment designed to establish developmental norms for relationships between boys and girls.[123] Controlled observations were made on over 100 'graduates' of the Merrill-Palmer nursery school, who were organized in recreational groups. From the original records, age scales were finally constructed. The results revealed a similarity in social-sex

more quiescent sexually than six-year-olds. From the ages of eight to eleven the children displayed active, aggressive, even often sadistic sexual interest which took either a homo- or a heterosexual direction The fact that this form of activity was so conspicuous in the prepubertal period is a direct reflection of the remarkably permissive nature of the environment in which the observations were made and indicates the extent to which such behaviour is socially determined.

The same tendency appears under the more lenient mores of people at lower economic levels Peasants reared close to nature show no break in the continuity of sexual development,[391] nor do children of proletarian groups [606] Unfortunately most of the scientific data available in the field of sex behaviour have been obtained from the middle class. We know relatively little about the social dynamics of lower-status groups or of other sub-cultures. Observation suggests that among the under-privileged, sexual expression, like the expression of aggression, is more direct and uninhibited.[167] It is not regarded as inherently taboo and evil. Even though parents may taboo sexual behaviour for their girls, the family example is often to the contrary. The child's play group discusses sexual relations frankly at the age of eleven or twelve, and status is acquired through sexual experience The class difference is beautifully illustrated in a recent study of Negro children in the city of Cincinnati [138] The poorer Negroes showed a notable freedom from restraint both in indulging in sexual relations and in discussing their experiences The relaxed inhibitions were correlated with decreased masturbation beyond pre-school age, less brother-sister incest, and fewer parental fixations as compared with Whites. Among Negroes from a higher socio-economic level, the standards of sexual conduct more closely approximated those of the Whites, and the increased restrictions apparently increased personal maladjustments, often leading to psychoneurosis.

The importance of culture in sexual development is most strikingly brought out by a glimpse of other peoples. Among the Trobrianders of New Guinea, who do not taboo sex, there is a steady growth of sexual interest and experience [393] Children

in the relationship between boys and girls and that a long and painful process of relearning is required for the acceptance of the opposite sex. These unfavourable attitudes result from our failure to provide proper training for sex living. Progressive education in this field is imperative for healthy psychosexual growth.

Adolescence has also been found to affect the interests of girls. A group of post-pubertal girls made significantly more mature responses on a series of interest and attitude tests than pre-pubertal girls of the same age. One of the most interesting findings of this experiment was the intensification of home conflicts which the changed maturity status apparently precipitated. Like the boys in the study previously cited, the girls showed increased interest in personal appearance and in heterosexual activities. Far from seeking to indulge in strenuous sports, however, they accepted the 'ladylike' tradition of abstaining from physical exertion [595]

In interpreting results of studies on puberty effects, we must recognize the possibility that they may not be direct effects of the physiological changes, but rather culturally determined personal reactions to the physiological events.

THE FEMALE SEX RHYTHM

In girls hormone changes occur in cycles which usually make their appearance within the fourteenth year.[103, 190, 358] The central event is the menstrual haemorrhage resulting in an average blood loss of 50·5 c c.[47] It has been found to recur somewhat irregularly at intervals of about 33 to 34 days for girls and 28 days for mature women [30, 190, 250, 256]

In spite of the superstitions and taboos with which this function has been surrounded,[239] the onset of menstruation does not usually have a traumatic effect on the individual's later life. It is apparently accepted by the majority of girls with little in the way of conflict and often with genuine pride [111, 349] There is always the risk, however, that it may be regarded as a restriction by emotionally immature girls who do not want to grow up and assume the responsibilities of adult women.[404, 665] The importance of acquiring a constructive attitude toward the menstrual function at the outset cannot be overstressed. The first step in that direction is to examine the available scientific evidence and to substitute it for primitive superstition

Physiological Processes. As in females of lower species, a sequence of four hormonal phases has been traced in women[472]

as a result of some activity, however, may result in painful menstruation[234] The accumulated facts from laboratory, field, and shop which have consistently failed to indicate a menstrual handicap should go far toward removing one serious obstacle to woman's acceptance of her femaleness

Emotional Reactivity. It has been popularly assumed that the apparently greater emotional instability of women in comparison with men is associated with the menstrual cycle. Some support for this notion may be found in studies based on subjective mood ratings, personality inventories, diaries, and the like. According to these reports, the pre-menstrual phase is characterized by activity spurts coupled with high tension and irritability, while the menstrual period is accompanied by fatigue, depression, and introversive tendencies.[19, 111, 143, 239, 383] Some investigators have reported confirmation of a mid-cycle activity peak characterized by feelings of elation.[19] In subjective material of this sort it is difficult to estimate the role played by suggestion Social tradition has set such a negative value on the menstrual function that women are led to expect unpleasant effects on mood and behaviour. These attitudes are often transmitted from older to younger women and result in a variety of menstrual disabilities.[514]

Related to emotional stability is stability of organic response to disturbing stimuli. To determine possible menstrual cycle effects, the writer confronted a group of normal women with intense electric shocks and measured a variety of reactions, representing different levels of voluntary control. These included galvanic skin response, breathing, muscular tension, and gross bodily movement. Analysis of the women's scores were not significantly different from analogous data obtained on male controls.[547] This is further confirmation of the finding that objective measure fails to validate subjective impression It does not mean that feelings of distress resulting from physiological upheaval may not augment the psychological stress experienced by adolescents in our culture.

Another way of getting at the relation between feelings and the menstrual cycle was Benedek and Rubenstein's correlation of vaginal smear analyses with psychoanalyses.[77, 78, 79]

According to the authors, smears indicating low hormone level are associated with eliminative and destructive tendencies Those representing high oestrogen function are normally related to active interest in the opposite sex, accompanied by a feeling of well-being and leading to sexual indulgence. In neurotics, however, the increased oestrogen seems to stir up emotional conflicts, especially those concerning homosexuality. In the pre-menstrual phase, when progesterone dominates the smear picture, the heterosexual tendencies are present but express a passive and receptive attitude and are often accompanied by impregnation fantasies. These three cycle phases

TABLE 7. *Distribution of the Psychodynamic Tendencies and the Correct Predictions of Hormones*

Hormone	Active Tendencies	Passive, Receptive, and Retentive Tendencies	Eliminative, Pre-genital, Destructive Tendencies
Oestrogen	1904	11	5
Progesterone	6	1721	14
Low hormone level	23	33	1188

suggested to the authors a recapitulation of individual sexual development according to Freudian theory: a pre-genital anal stage, an active stage often associated with homosexual conflict (in neurotics), and a passive heterosexual stage. Results based on the analysis of 152 cycles of 15 women appear in Table 7.[79, p. 30]

In view of the predominantly negative findings of objective measurement, these surprisingly clear psychosomatic correlations seem too good to be true. Their perfect symmetry would indeed arouse suspicion of methodological flaw were it not for the saving fact that the two series of analyses were made by different investigators in different institutions. Even so, overlapping was not entirely ruled out because the smear-taking experience sometimes had repercussions in the psychoanalytic sessions and may have given inadvertent clues to cycle phase. Such clues might unintentionally have served as a basis for predicting hormonal changes in correlation with changes in

dream or fantasy trend. The variability of the smear picture from phase to phase might well have taken up some of the slack in agreement and account largely for the unusual consistency of the predictions reported

Of course, the selection of patients whose symptoms and psychoanalytic revelations indicated a relationship between neurotic disturbances and ovarian functions was aimed to silhouette whatever correlations there might be As the authors are frank to admit, one would not expect the behaviour of normal women to be so directly influenced by slight shifts in endocrine balance. We should look to social forces as the more potent determiners of normal adult behaviour.

In Daniels's more recent intensive study of a single case, dream contents revealed in psychiatric interviews were correlated with urine assays of sex hormones.[163] There was a tendency for dreams with erotic implications to be concentrated around the time of expected ovulation although they were distributed throughout the cycle. Similarly, although nurture dreams and those dealing with pregnancy and children reached a peak in the middle and latter portions of the cycle, there were many exceptions The pregnancy theme manifested toward the end of the cycle may have reflected the subject's frustrated maternity longings. The nutritive dreams were conceivably related to the weight cycle.[622] In general, Daniels failed to establish a definite correlation between the psychological picture and sex hormones He emphasized the importance of the dreamer's personality and the role of external events.

Sex Desire Erotic feeling seems to be intensified though not initiated by the onset of menstruation [659] On the basis of our knowledge of subhuman forms, we should expect the intensification to recur rhythmically. We have already noted the correlation between increased sexual activity and oestrus in the lower mammals. Even among primates, where mating is not restricted to a particular phase of the cycle, a pre-ovulatory period of heightened sexual behaviour appears although, as we have seen, the correlation of behaviour and menstrual phase is often masked by the operation of social factors. At

logy. Adult sexual orientation must be viewed as an emergent from a rich and varied socializing experience. Sexual interest and behaviour appear in the child as important aspects of social development. The physiological puberty changes energize the reproductive mechanisms, intensifying and making more specific the sexual needs. Of the various possible directions sexual behaviour may take, nature and nurture conspire to focus it on the opposite sex. But canalization is slow, and as in the lower primates, there is much trial and error before the acceptable mode of sexual expression is attained.

AUTO-EROTICISM

Incidence. Carried over from childhood, auto-eroticism becomes the typical sexual behaviour pattern of early and middle adolescence[659] Masturbation, the most common form, is widely practised. Table 8 (adapted from Harvey) summarizes the results of various studies up to 1932 and shows

TABLE 8 *Summary of Early Investigations of Auto-eroticism*

Author	Date	Method	Subjects	Sex	Age	Number answering	Per cent Auto-erotic
Exner	1915	Questionnaire	College	M	19	531	60
Peck and Wells	1923	Questionnaire	College	M	23	188	74
Peck and Wells	1925	Questionnaire	College	M	23	238	82
Achilles	1923	Questionnaire	College	M	22	42	64
Achilles	1923	Questionnaire	High School	M	16	406	47
Hamilton	1929	Interview	College	M*m*	42	100	88
Achilles	1923	Questionnaire	College	F	21	47	28
Hamilton	1929	Interview	College	F*m*	42	100	40
Davis	1929	Questionnaire	College	F*m*	38	1000	38
Davis	1929	Questionnaire	College	F*s*	37	1000	60

m married; *s* single

the percentage of subjects who clearly admitted having practised the habit at some time:[277, p. 98]

According to these results, the approximate median percentage of indulgence in masturbation for men is 70; for women, 40. More recent data, covering the past decade for both men[330, 608] and women,[349, 397, 602] are in essential agreement with the earlier findings. In view of the reticence surrounding this practice, the figures reported are undoubtedly

under-estimations. Indeed the latest material, based on personal interviews, indicates practically universal occurrence in males in our society.[490] The situation for girls is in all probability not far removed from that of boys.

As we have already suggested, genital manipulation in childhood is a more diffuse and less specifically erotic experience than in adolescence. Increased hormonal action may in part account for the increased incidence of masturbation at puberty.[251, 659] The frequency depends on the balance between erotic capacity of the individual and the cultural restraints to which he is subjected. For the adolescent male in our society, masturbation is the major sexual outlet, and it usually decreases as other sources of gratification are discovered.[490]

Cultural Determinants. Auto-eroticism is to a large extent a social phenomenon, occurring almost universally under conditions that prevent normal sexual intercourse. Our society makes heterosexual relationships difficult in a number of ways. For one thing, the over-protection that the family circle exerts on its members delays their attaining emotional and social maturity. For another, the prolonged education which a large proportion of our population enjoys postpones economic independence and the possibility of marriage. Thus the individual reaches reproductive maturity before he is prepared or permitted to undertake adult sexual relationships. Lack of opportunity for relations with the opposite sex is reflected in masturbation. At all ages there is a higher incidence for the unmarried[659] and, among bachelors, for the older as compared with the younger men.[608] Since marriage is neither denied to all nor available to all, personal selective factors are bound to enter. Some, owing to their own inferior social adjustment, will avoid marriage and depend exclusively upon auto-erotic practices, while others whose heterosexual orientation is well developed may be prevented from marriage because of circumstances and depend on masturbation only as a temporary expedient to reduce their mounting sexual tensions.

Personality Correlates. We find that masturbation, like other

forms of sexual behaviour, is not a constant but varies according to the personality context in which it occurs There is apparently no particular type that is especially prone to acquire the habit. Withdrawn persons, who are unable to form normal attachments with the other sex as adults, have been found to include a relatively high proportion of those who masturbated as children [659] Moreover, groups of women so badly adjusted socially as to require hospitalization indulged more frequently than normal groups in excessive masturbation and continued the practice over longer periods

TABLE 9. *Percentage of Women Subjects masturbating, grouped according to Scores on Maslow's Test of Dominance Feeling*

Dominance Scores in Deciles	*N*	Per cent
61 to 182	44	70
32 to 60	13	54
16 to 31	7	71
1 to 15	8	50
− 12 to 0	7	57
− 28 to − 13	8	62
− 40 to − 29	5	20
− 58 to − 41	5	20
− 81 to − 59	7	29
− 145 to − 82	10	30

of time [349, 602] There is also a close tie-up between masturbation and personalities high in dominance feeling, as suggested by the data in Table 9 from Maslow.[397, p. 270]

Thus we find masturbation in dominant as well as in reclusive personalities. Furthermore, it occurs as frequently in men especially selected for their intellectual superiority and moral integrity as in others [330, 608] Generalization is impossible, and the only conclusion we can draw is that masturbation is differently motivated in different personalities For the introvert or psychopath who has failed to free himself from family ties it may represent an escape from the more exacting demands of heterosexual relations; for the high-dominant individual, it may represent one of the many forms of sex play which he enjoys, while the low-dominant person is too repressed to indulge at all; for the upstanding youth it is merely

a means of eliminating distracting tensions and increasing efficiency.

Consequences. Just as the meaning of auto-eroticism differs for each individual, so does its desirability or undesirability. Whether the practice is good or bad for him depends upon its significance. No absolutely good or bad effects have been scientifically established. It is often a symptom of underlying maladjustment and represents a failure to grow up sufficiently to undertake adult sex relationships In such cases the treatment should be aimed at the underlying difficulties rather than at the symptom Removing the symptom may drive the trouble still further underground and cause more serious involvement of the personality.

In cases where masturbation is a function of external circumstances, it normally declines when conditions become favourable for relations with the opposite sex and may be reduced in the meantime if satisfying emotional and physical outlets are provided. The only danger in such cases lies in the guilt feelings the individual may experience because of faulty sex education. Persons who are socially well adjusted and whose indulgence in masturbation represents an ebullience of animal spirits are capable of handling the situation for themselves.

BISEXUALITY

The adolescent's first attachments outside the home are apt to be rather undifferentiated, ambi-erotic affairs involving either sex, popularly known as 'crushes'. In the transition from family ties to the larger society, he is likely to transfer his affections to older individuals who thus serve as parent substitutes. At this stage there is usually little co-ordination between the physical and the psychological aspects of love, so that the adolescent may be unaware of the sexual components and view his affection as pure and idyllic. In fact the relationship is an extremely one-sided affair, in which the love object appears unrealistically as the embodiment of the adolescent's ideals. He is not seen objectively as an equal with whom there can be mutual sharing of interests and experiences. It is enough to worship from afar.

A closer approximation to a mature, equalitarian relationship is the crush between people of the same age According to the results of an extensive canvass of camps, schools, and colleges, most adolescents experience one or more crushes of this sort. They may be variously motivated by a desire for companionship, sympathy, and understanding, or by a recognition of physical beauty. Moreover, they may involve members of the same or of opposite sex. The boy-girl crush differs from a full-fledged love affair only in degree of stability and of psychosexual integration. Crushes in general seem to be more prevalent among girls, and the homo-erotic forms are almost exclusively confined to them.[307] Before heterosexual orientation has become fully established, such relationships are easily produced especially in sex-segregated institutions or under any other conditions that block normal heterosexual development.[142, 211] Fortunately these fixations are unstable and quickly yield to interest in the opposite sex when the opportunity presents itself.[307, 349]

HOMOSEXUALITY

Incidence. Even deeper degrees of homo-erotic involvement occurring among young people are often easily reversible. They occur much more widely than is popularly realized, as indicated by the figures in Table 10 from Davis's study of normal women.[168]

TABLE 10. *Incidence of Different Forms of Homo-eroticism among Normal Women*

Form of Homo-eroticism	Married, N=966		Single, N=1181	
	N	Per cent	N	Per cent
Nonsexual	149	15 4	293	24 9
Sexual, nonovert	17	1 8	78	6 6
Sexual, overt	140	14 5	234	19 8
Total	...	31 7	..	51 3

As in the case of autosexuality, we must allow for underestimation since the strict cultural taboo makes it difficult to

admit homosexual practices. In spite of their surprising prevalence, they seldom interfere with the attainment of normal marriage.[168, 611]

Confirmatory results have recently been reported for men and boys. In a heterogeneous group of nearly 300 boys, 38 per cent were found to have indulged in pre-adolescent homosexual play, and in 46 per cent homosexual experience occurred during adolescence. The frequency varied widely, reaching a maximum of 400 contacts. The range of partners also varied but, among adolescents, was usually under five.[490] Among men a study of 1600 case histories, covering a wide variety of subjects, revealed that 36 per cent had had one or more overt homosexual experiences. For the college-trained group alone the figure was 30 per cent. These episodes apparently had little carry-over and often coincided or alternated with heterosexual activity.[329]

The Role of Biology. In cases where the permanent orientation is homosexual, the question arises as to the relative influence of biological as contrasted with social factors. Certain male homosexuals have been regarded as feminized genetic males.[53, 350] In the majority of cases, significant shifts in androgen-oestrogen balance in favour of oestrogen have been reported.[237, 238, 434, 656, 672, 673] Moreover, some investigators have noted a proneness on the part of homosexuals to physical deviations[44, 285, 288] which are usually not sufficiently extreme to classify them as intersexuals.[177, 669] Association between homosexual tendencies and physical anomalies need not, however, imply a causal relationship. It may not be the structural defects *as such* that cause the sexual deviation but rather the psychological reaction to them. The presence of physical characteristics of the opposite sex may create conflict in the individual and lead to a redirection of the libido[44] The inconsistencies in 'corrective' hormone effects lend further support to a psychological interpretation. Efficacy of treatment seems to depend on frame of mind and general outlook.[44, 45, 515, 520]

In the rare cases where physical deviations reach so high a degree of intersexuality as to warrant the diagnosis of herma-

phroditism, the variability in sex orientation is an index of the importance of social attitudes. Several cases of males mistaken for females and reared as such have been reported. The case of James is of special interest because of a follow-up after fourteen years [179, 180]

James spent his first fourteen years as 'Margaret'. He was never comfortable as a girl. He suspected that he was not a girl at five years of age when he noticed that his genitals were like his brother's rather than his sister's At eleven his voice changed and at twelve he rejected the feminine role. Although he had been accepted by girls it was as a tomboy. On his fourteenth birthday he was officially transformed into a boy by a change of clothing and residence. Although at first he had the reputation of being a sissy among the boys, he overcompensated and became a tough boy. Later his adjustment seemed more normal.

Even after fourteen years in the masculine role, however, James's masculinity structure was still weak and his heterosexual adjustment uncertain.

'Martin Murgy', also reared as a girl, showed more independence of structure and attitude.[420]

A testis was found to coexist with female genital organs Although he had been rather a tomboy, while still in skirts, he said he would be content to belong to either sex. The appearance of a beard and the deepening of the voice, however, proved so embarrassing that he welcomed the suggestion of his essential maleness. Psychological study following surgical readjustment revealed a trend of interest toward certain typically masculine occupations, a taste for outdoor activities, for social-athletic pursuits. His M-F scores averaged more masculine than those of unselected male groups of his age and education. The test also revealed the effects of social conditioning; on those parts which depend on habit and experience, his ratings were more feminine than the male norms while on those in which the wish to be masculine determined the score, he made a more masculine showing on the test. In the light of such evidence it is more than probable that the 'intersexual' M-F scores reported for various groups of inverts reflect psychological attitude rather than biological anomaly.

An even more striking example of psychosomatic incoordination appears in the case of an anatomical male who insisted on playing the feminine role.[207]

S. M., Unit 35209, Massachusetts General Hospital. A seventeen-year-old individual who had always regarded herself as a girl complained of failure to menstruate. Examination revealed a large clitoris, but an absence of uterus, tubes, ovaries, vagina, or mammary tissue. There was neither prostate nor seminal vesicles, but the patient did have undescended testes and predominantly male secondary sex characters including a deep voice which is an important diagnostic sign of masculinity.[233]

From early childhood S. M. had assumed the feminine role. 'Her' earliest memory concerned an episode representing herself in this role at the age of four in doll play. During adolescence, like normal girls 'she' became interested in boys and dances, and later, in sewing, cooking, and housework. Moreover, she experienced typical feminine fantasies of being married and having a family. This obviously female orientation apparently began with an early identification with her mother and fear of her father whom she felt to be cruel.

There are other similar cases[664] showing marked discrepancies between biology and behaviour which are further evidence of the predominant importance of social factors in psychosexual growth.

Social Factors. Henry, who has done extensive work in this field, recognizes the greater risk of homosexuality arising from social factors than from structural deviation.[287] We have observed how the lack of opportunity for heterosexual contacts, whether through segregation or through moral taboos, may focus an individual's interest on members of his own sex. Such an orientation is usually temporary, however, and easily yields to normalizing influences. We have also suggested that more deeply seated patterns of homo-eroticism have their origin in the early family situation. A pervading atmosphere of happiness in the home leads to a ready acceptance of life in general and sex role in particular.[204] Homosexual trends are but one part of a general disturbance in emotional development which may result from parental rejection, overdependence on parents, cross-sex identifications, or traumatic sexual experiences.[76, 286]

Motivation. Homosexuality, like autosexuality, is variously motivated and consequently may appear in any personality pattern. The withdrawn individual may find in a love rela-

tionship with someone of his own sex a comfortable haven from the more formidable adjustments with the other sex.[659] The dominant woman, on the other hand, finding that the feminine role in our society fails to give her energies sufficient outlet, may express her 'masculine protest' in the active pursuit of more feminine women as well as in business and professional life.[397, 638] The relationship between social dominance and homosexual behaviour is brought out strikingly in a recent study of Negro and white girls institutionalized together. In this setting the Negresses enjoyed superior social prestige on the basis of which they behaved aggressively toward whites of equivalent mental levels. Their aggressiveness was interpreted as 'maleness' by the white girls, who gave much evidence of being sexually attracted by them The Negresses assumed the masculine role in so far as it involved making sexual advances, accepting admiration, exhibiting jealousy, showing off, and giving commands. The white girls responded to this social maleness by vying with one another for a Negress's favours, even to the point of stealing food from the staff kitchen The social origin of the homosexual dominance behaviour on the part of the Negro girls came out clearly when they dropped the masculine role they had assumed toward white girls in order to play the feminine role toward another Negress.[1, 2]

In concluding our discussion of adolescent homo-eroticism we should emphasize the fact that people whose adjustment remains at this level are the exceptions and that for the vast majority in our society it represents merely a temporary phase in the process of attaining psychosexual maturity. In some societies a homosexual stage is considered essential to the attainment of psychosexual maturity. For example, the 'making of man' cult among the Keraki Indians of southern New Guinea requires the assumption of different roles from boyhood to old age The first is a passive homosexuality, followed by active homosexuality, which finally gives way to the adult heterosexual stage. It was thought by these people that no boy could grow to full stature without playing the homosexual role for some years.[81]

HETEROSEXUALITY

Psychosexual Growth. When at last the individual is definitely oriented toward the opposite sex, he still has a learning process ahead of him before he will be fully prepared for an adult equalitarian relationship and the responsibilities of parenthood. Although there is no sexual I.Q., some normative data are available for limited segments of male and female American society. Among boys from middle- and upper-class homes in the Middle West, pre-adolescent sex play was reported in two-thirds of the cases. It was expressed in a variety of forms, the most common of which was manual exploration associated with direct observation of the genitals. Exhibitionism, attempts at intercourse, and oral contacts were also reported. During the adolescent period heterosexual activity was most likely to occur as petting which included kissing and manipulation of the breasts and genitals. The petting became more frequent and elaborate with age. By the age of eighteen, 80 per cent of the boys had indulged in kissing while 44 per cent admitted the complete sex act. Their female partners included companions, pick-ups, prostitutes, fiancées, house servants, and older women.[490] The variety is symptomatic of the passing of the double sex standard of the 1900's.

For women from approximately the same socio-economic level, we have Landis and Bolles's scale of psychosexual maturity. In a study of 295 women they found that certain experiences, attitudes, and practices were common and usual at certain ages and could be regarded as approximate age uorms. Three levels of development are represented in the following excerpts from their scale.[348, p. 449-50]

Maturity, fifteen to seventeen years

The average girl of fifteen to seventeen years has gone out with boys fairly frequently but has not had complete sex experience. Her relationship with boys has been carried to the extent of mild petting. She is still somewhat tied to her family emotionally, and economically has not reached an independent adult status. Her sex information is fairly complete, but she feels quite constrained in discussing such matters with her family. She still takes a good deal of pleasure

in associating with girls of her own age but is definitely interested in boys, more as dates than in any more serious fashion. She has fairly strong emotional attachments to members of her family and to her friends of either sex but is not exclusively attached to any one of them as an individual.

Maturity, eighteen to twenty-one years

The average girl between these ages may be expected to show the following characteristics. She has many friends and activities outside the family circle which keep her away from home a large part of the time. She is not wholly independent of her family financially, however. She has had a fairly complete knowledge of sex since she was sixteen years old. She has gone out with six or more boys on different occasions, and feels that she is attracted to one of them, but has not been thinking specifically in terms of marriage. Her attitude toward sex is one of healthy interest. She is not preoccupied with boys, although more and more of her time is spent in planning or day-dreaming about particular individuals.

Maturity, twenty-two to twenty-five years

The mature woman has completely resolved her family ties and is free from any pronounced signs of narcissism Her heterosexual intimacies have included some sex play or petting She is free from any unfavourable sex attitudes.

With further quantification this scale could become a valuable diagnostic instrument. It is an important step forward in the analysis of human sex behaviour. It shows a gradual progression in heterosexual growth from minor intimacies to the point of complete intercourse, and it shows this progress as a phase of general social development.

Personality Correlates. Qualitative variations from one individual to another resulting from personality overtones cannot be handled on a quantitative scale Bromley and Britten,[106] however, have made a start in this direction in their classification of over 1000 adolescent boys and girls according to sexual behaviour types. These include the serious-minded 'virginal' girl who is socially timid and lacking in the self-confidence to compete for dates. In contrast, the 'experimenter' values her own personality development very highly and shows an inquiring mind and venturesome spirit with no fear of sexual experience. Among the boys, the 'uninitiated' corresponds

to the virginal and is prevented from sexual experimentation by a mixture of fears and ideals, while the 'hot-blood' represents the uninhibited, self-indulgent young man with few fears.

Supporting evidence concerning the female types may be adduced from Maslow's finding that the virgins and the promiscuous occupy respectively the lower and upper extremes in dominance-feeling scores.[397]

Cultural Norms. The application of psychosexual standards is necessarily limited to the conditions of standardization because of the very large part cultural factors play in psychosexual development. In those primitive societies that do not interpose barriers to heterosexual relations, coitus itself may be practically universal by the teens.[659] Obviously a scale designed to fit our present standards would be invalid as a measure of theirs. Even subcultural groups may vary widely in mores, as indicated by differences between Negroes and whites in our society in evaluating sex delinquencies.[138] Among lower-class Negro girls, the accepted standard of morality corresponds more closely to the conduct expected of middle-class adolescent boys than to that of corresponding groups of girls. On the basis of field work on this problem, Brenman points out that a girl who had remained a virgin until the age of seventeen was the source of much amusement to her schoolmates. A common pattern of sex behaviour for these girls is to consort with married men. As one subject put it, 'I know it's wrong for me to accept a married man's company but knowing that they know how to entertain a woman, I do. If you don't have sexual relations, you'll be either sick or insane, so I decided that a girl should give vent to her feelings'.[104, p. 317]

A very different sex code prevails in the Italian slums of Eastern City where a premium is placed upon virginity at marriage. This ideal is upheld by strong legal and institutional sanctions and is supported by equally strong sentiments. For a 'corner boy' to have 'laid' a virgin is to incur the severe censure of his group.[654] If there were need to prove the relativity of cultural norms of sex behaviour, we could cite

examples indefinitely, but perhaps those chosen will suffice to indicate the risk of generalizing from one group to another.

THE ASSUMPTION OF SOCIAL SEX ROLES

The success of the adolescent's adjustment to the opposite sex is not merely a matter of appropriate sex behaviour. It is essentially dependent on his acceptance of the social role his sex membership enjoins upon him. In our society this is no simple matter We have found that the actual roles of males and females at different periods are quite different from the fixed dichotomy we popularly assume. The ever-changing definitions of masculinity and femininity create confusion in the social expectancies of maturing boys and girls concerning one another.[696]

Feminine Roles The earlier physical maturation of the girls is partly responsible for this situation. For a time they enjoy having the upper hand, and sex roles may run in reverse. New patterns of behaviour begin to emerge so that the 'little lady' design which we noted earlier gives way to the more dominating 'good sport'.[623] Another acceptable junior-high-school motif is the glamour girl with accent on sophistication and appearance [625] This pattern often proves a safeguard against the lowering of status the girl inevitably experiences when the boy catches up with her. It is at this time that girls want to be boys because boys do all the wonderful things and get all the admiration [550] Unless these social losses are counterbalanced by placing a high value on her newly acquired form and function, there is grave risk that she will reject not only her unsatisfactory social role but, along with it, her supremely satisfying biological functions The risk is all the greater in cases of noticeable deviation from the developmental norms. Large hands and feet, unusual tallness or squattiness, bring into question the girl's essential femininity.[584] Fortunately the misfit is the exception, not the rule. An extensive survey of adolescents indicates that the modern girl is looking forward to expressing her femininity in marriage and maternity even more than her mother did, but that she hopes to combine these functions with holding a job [697]

Masculine Roles. In the case of the boy, skill at sports is highly valued all through high school, but boisterousness gradually ceases to carry prestige. Moreover, the base of achievement broadens to include success in other areas, such as journalism, dramatics, or student government. Social standing and popularity with girls also contribute to the older adolescent's status.[413]

Although girls in our culture suffer more from discontinuities in sex role than do boys, it is not all smooth sailing for the boys. Those who have the hardest time are the physically handicapped. So much stress is still placed on a strong physique, athletic skills, and leadership in games that a boy who cannot measure up to the standard feels that he cannot be an adequate male. A sensitive, studious, or artistic boy is in the background and may feel driven to do almost anything to gain status in his friends' eyes[550] The greatest sufferers of all are the unfortunate cases in which puberty ushers in a feminine distribution of fat accompanied by small genital organs This sex-inappropriate development following normal childhood is apt to be traumatic in its emotional consequences and lead to bitterness. If it fails to straighten out spontaneously, treatment with male hormones may be effective not only in relieving the physical condition but also in increasing feelings of security.[320]

These shifting standards in sex roles in adolescence as in childhood make it difficult for the growing individual to conform. Unless he adapts his personality to the changing demands, his status is bound to fluctuate in a disturbing way. For example, Meek cites the case of an animated and active girl who did not enjoy the prestige of the group at twelve years when the quiet little lady was the ideal. By fifteen, however, she was judged by her classmates as one of the most emulated because the active, gay, outgoing personality which she continued to manifest had become the new model.[413] Just as often the change in status is in the other direction To prevent such sudden jolts in development, a fundamental revision of prevailing concepts of sex roles is indicated. Meanwhile guidance through the school could do a great deal to ameliorate the situation

SEX EDUCATION

Looking back over our survey of sexual development in childhood and adolescence, we may trace a parallel between learning the heterosexual pattern and learning any other complex performance. In our society, because of the social barriers interposed between the individual and the goal, there is much trial and error. He often goes down the blind alleys of auto- and homosexuality, but as insight develops and the correct pattern becomes clearer, these aberrant forms of behaviour normally drop out. The adjustive process is complicated by the sex differentiation in social role. The learning would be more insightful were the young people given as careful preparation in sex living as in reading, writing, and arithmetic. For a proudly literate society consciously to evade the responsibility of education in this important area is difficult to understand and impossible to excuse. In this respect we are behind socially progressive Sweden where sex study was included in the high-school curriculum in 1935 and plans for expanding the requirements were under way a few years later. The greatest obstacle to carrying out the programme there was the inadequacy of available textbooks[267] Fortunately there are pioneers in this country who are busy blazing a trail and there is hope that our biology books of the future will not be written as though there were nothing but a 'smooth surface below the waist', as H. L. Mencken once put it.

Education for Social Sex Role. Education for living with the opposite sex is much broader in scope than imparting the facts of life. It includes the whole range of social-sex relationships between men and women. In planning a comprehensive programme of sex education, the first and foremost consideration should be given to a revision and clarification of sex roles. The conflict and confusion that mark the present transition from patriarchal to democratic forms of relationship between the sexes must be resolved so that the growing boy and girl may work toward certain personality ideals and social goals and be able to count on their continuity. New norms will have

to be established to fit the new patterns and used to guide this phase of development.

Casual Sex Impressions. As far as details of reproductive biology are concerned, it should be recognized at the outset that the question is not whether or not to give the child sex instruction. As Conn forcibly points out, there is no such thing as *not* giving sex education.[147] Nearly all children at an early age receive sex impressions which may permanently colour their attitudes toward this phase of life. They may pick up negative attitudes from parents' unverbalized evasion of the issue. Or they may pick up negative attitudes from over-severe toilet training which easily irradiates to the functions of the closely associated genitals. Again, punishment directed at the child's natural curiosity and exploration of his sex organs may induce guilt and fear concerning their function.[229] To help parents attain the necessary objectivity to handle the early problems of sex training, visits by parent advisers and group consultation services provided by the school have been successfully used.[467] Probably there is no better mother's helper than the family cat, dog, or white rat. These pets can be counted on to demonstrate without embarrassment or obscenity the natural reproductive processes. The growing child's earliest impressions concerning sex are formed not only in the home but on the street [198, 304, 491] While the interchange of sex information and experience is a necessary part of group life, the inadequacies and inaccuracies need to be counteracted by systematic instruction

Systematic Sex Instruction Formal sex education should utilize all the regular available channels rather than introduce new and special mediums which might do more harm than good by over-emphasizing sex. From nursery school to college the facts of life could be disseminated as an integral part of nature study, and later, of biology, hygiene, social sciences, home economics, and other standard courses.[199, 288, 247, 530] Throughout, it should be progressive in the sense of following the individual's needs as they arise rather than to set up an arbitrary curriculum of what should be taught.[73] At the outset, an inventory should be taken of the child's stock-in-trade

of sexual knowledge and attitudes. Emotional resistances resulting from faulty preparation must be resolved before new material can be assimilated.[229] Moreover, he should be supplied with an adequate vocabulary of sexual terms. We have noted the self-consciousness surrounding the special words coined to describe reproductive processes. The substitution of objective biological terms would not only avoid a *verboten* atmosphere, but would provide a working basis on which could be built an effective sex education.[145] The verbal handicap arising from early mistraining results in an illiteracy in later childhood and adolescence which makes it impossible for the individual to read the simplest literature on the subject.[491]

As for the subject-matter, the progressive approach would demand that it too be adapted to the individual's changing interests and capacities [99] Precocious education in this field as in any other is ineffectual if not harmful During early childhood curiosity centres around the origin of babies and genital sex differences. A little later the child's interest becomes directed toward his mother's body and the process of pregnancy. It is not until he is nine or ten years old that he becomes concerned with the less obvious role of the father in reproduction.[147, 279] In adolescence, the main questions concern problems of marriage and family life, techniques of intercourse, birth control, and ways of handling the sex drive.[73, 165, 185]

If sex education could thus meet the individual at each stage of development, it would be able not only to correct the many fallacies prevalent even among the educated today but to develop wholesome attitudes that would contribute importantly to later adjustment [488, 644]

CHAPTER 13

Adult Relationships between the Sexes

PREMARITAL PREPARATION

In all societies adult sexual relations are regulated by some form of marriage. That culture rather than biology determines the nature of the institution is indicated by the wide variety of forms represented.[113] Polyandry, polygyny, and group marriages are found as well as the various monogamies. Even Western culture does not present a uniform type. Differences in accent and overtone characterize marriage in Europe in contrast to marriage in America, marriage in the lower class in contrast with marriage in the middle class, and so on throughout the culture. It is middle-class American monogamy around which our discussion will centre. Contrary to the glamour literature from fairyland to Hollywood, marriage is not a mysterious elixir which overnight creates new personalities from old. We have followed the long course of psychosexual development leading to permanent heterosexual mating. As the culmination of a continuous growth process, the quality of the marriage reflects the adequacy of the premarital preparation From the moment of birth the individual in our society is being prepared, well or badly, for marriage. To grasp the import of this, we must conceive of marriage in a broad sense. Too often marital adjustment has been narrowly identified with the physical sexual relationship No one can deny the dynamic part that this plays in marriage, but it must be seen in its proper setting That setting involves the whole of both personalities in the partnership and the role they are trained to play and to expect from their partners. For this reason we should consider the total life history as preparation for the most mature and rewarding relationship that our society offers

Family Factors. For patterns of response that are to play a

decisive role in marriage we must go back to early family relationships. Childhood happiness depends upon mutual confidence between child and parent. In an atmosphere of trust and security, positive attitudes toward all aspects of life, including the sexual, are likely to flourish The emotional climate of the home is of much greater significance for later marital adjustment than such exterior considerations as income, occupation, number of brothers and sisters, or religious training.[349, 485, 609]

By the time the child reaches adolescence, he should be sufficiently secure to stand on his own feet. His childish affections give way naturally to the more independent relationships of maturity. Where the early attachments are of a tense, clutching character, they indicate insecurity and are not easily dissolved in adolescence. Under such circumstances the individual is apt to carry his emotional dependencies over into marriage, with unhappy consequences. This often occurs in people who have experienced excessive childhood illness and in those suffering either parental rejection or overprotection Such faulty attitudes indicate in themselves a neurotic clinging to the child and often reflect the parents' marital unhappiness. They in turn result in the marital unhappiness of the next generation and in this way the vicious circle is perpetuated. Psychological weaning must work in both directions – the parent must be weaned from the child as much as the child from the parent. Healthy relationships with contemporaries are seriously impeded by fixations on parents or parent substitutes As evidence we may cite a recent study of attitudes toward parents and courtship behaviour among college men. It was found that those who reported the lesser degrees of love for their mothers indulged in more courting than the men whose filial love was very marked [662] To meet the increasingly equalitarian demands of modern marriage, emotional flexibility is essential.[115] The dynamic influence of early social role on marital compatibility is nicely illustrated in Burgess and Cottrell's series of case histories The following excerpts from the case of Mr and Mrs G. provide an excellent example.[115, p 202ff]

Mrs G. (age twenty-six) appealed to her physician for help in meeting what she regarded as a crisis in her marriage. She stated that Mr G was drinking heavily and with increasing frequency. His gambling was becoming almost incessant and was increasingly reckless. ... In his relationship with her he alternated between periods of great self-condemnation ... and harsh words, telling her he would be 'damned glad to get rid of her'.

Mr G (age twenty-eight) reported intense resentment at not getting complete response from his wife. Further discussion revealed that his feeling of revulsion from his wife was not all due to deficiencies in the sexual relation. Some of his most intense resentments centred around his wife's efforts to control and direct him.

This story repeats earlier patterns of behaviour. Mr G. was the younger of two boys. His mother dominated his father with neurotic behaviour. Mr G. identified himself with his father and adopted an ambivalent attitude toward his mother. He revenged himself upon his mother by becoming the black sheep. This pattern of adjustment unless resolved at adolescence would call for a wife who could play the role of mother on whom he could depend and, at the same time, fight.

Mrs G. filled this bill almost to a T. Her mother died during her thirteenth year, leaving her with an invalided older sister and younger brother to care for Her father drank and later her brother followed suit. In this setting, Mrs G. assumed the responsibilities of a parent in relation to rather dependent persons, particularly with respect to her brother, toward whom she felt the closest attachment By marrying a person who fitted into the wayward younger-brother-son role, Mrs G was able to carry over her early behaviour pattern

Tied to these early social roles, Mr and Mrs G. could hardly expect to achieve a more mature emotional relationship with each other. The chances of their being happy with other partners are even smaller. Under the circumstances they are comparatively well mated, because they really do satisfy basic emotional needs in each other. It is at best, however, a lame-duck relationship and, as long as they do not have insight into the unwholesome attitudes which they have carried over from childhood, their marriage is bound to remain precarious and unsatisfactory.

Psychosexual Experience. Since marriage is merely an outgrowth of preceding preparation, we should expect to find

those who make the best adaptations to have achieved the greatest psychosexual maturity before marriage This involves a full understanding and acceptance of the role to be played in the relationship. Failure to differentiate *biological function* from *social role* has entrenched the subordination of women. The resulting resentment has been responsible for a repudiation of femininity by many women in all its aspects, with disastrous effects on their relationships with men as well as on their own fulfilment as women It is only the woman who thoroughly understands her role and enthusiastically embraces it who can hope for happiness in marriage. The sexual relationship that she is able to develop is a reflection of her attitude toward this role. Those who have reached this maturity level sometimes seek premarital sexual expression. In line with this, Landis reported that women with adequate adjustments in marriage had more premarital sexual attachments and interests than others [349] This relationship is obscured by social taboos, which prevent overt sexual expression before marriages. Actually, whether the complete sex act occurs before or after marriage is important only from a cultural viewpoint. The important thing for the individual is that progress in sexual development be gradual and intelligent, avoiding sudden jolts and nerve-racking delays. Since the adjusted member of any culture has by definition interiorized its mores, his desire is to conform and to expect conformity in others. With special reference to sexual behaviour, if in a given society female eligibility for marriage were enhanced by previous childbearing, the prevailing ambition among girls would be pregnancy.[340] If on the other hand, as has long been our custom, virginity is the desideratum, there will be a desperate effort to preserve this condition – technically at any rate Under these circumstances it is not surprising to find a somewhat higher incidence of marital happiness in our society frequently,[168, 202, 259, 609] though not universally,[349] reported for those who were virgins at marriage. In view of the relativity of mores, we cannot accept these findings as the last word on the subject Mores are functions of time as well as of space and are undergoing rapid change in Western culture at the

present time. What is true today may not be true tomorrow. Virginity at marriage is a case in point. Figures for premarital intercourse have risen from a low of 7 per cent with Davis's rather conservative group in the 1920's to the 25 per cent reported by Landis, and the even higher percentages found by Terman for groups studied in the 1930's. On the basis of past and present trends as revealed in Table 11, Terman predicts for the future that virginity at marriage will be close to the vanishing point for boys born after 1930 and for girls born

TABLE 11. *Premarital Sex Experience in Relation to Date of Birth*

Husbands	Date of Birth			
	Before 1890	1890–9	1900–9	1910 or later
	(*N*=174), per cent	(*N*=291), per cent	(*N*=273), per cent	(*N*=22), per cent
1. None	50·6	41·9	32·6	13·6
2. Spouse only	4·6	7·6	17·2	31·9
3. Others only	35·6	27·5	16·5	13·6
4. Spouse and others	9·2	23·0	33·7	40·9
Wives	(*N*=104), per cent	(*N*=277), per cent	(*N*=336), per cent	(*N*=60), per cent
1. None	86·5	74·0	51·2	31·7
2. Spouse only	8·7	17·7	32·7	45·0
3. Others only	1·9	2·5	2·1	3·3
4. Spouse and others	2·9	5·8	14·0	20·0

after 1940.[609, p. 321] He considers that at this rate of increase premarital intercourse with the future spouse will be universal by 1950–5. The significance of virginity at marriage for happiness will vary with its general cultural evaluation, and changes are to be expected accordingly.

The Unmarried Woman. A substantial proportion of adults in our society fail to carry their psychosexual development to its cultural fruition in marriage. In the handicapped this may indicate an arrest of development. For example, Landis found that women suffering from various forms of *mental* abnormality were often bound to childish attachments which interfered

with their assuming adult relationships with the opposite sex.[349] They were less likely to indulge in physical intimacies with men and were more apt to express emotionally extreme attitudes toward various aspects of sex than the normal group with whom they were compared. These indications of failure to develop normally were in many cases associated with unfavourable home conditions.

The *physically* handicapped woman is also retarded in psychosexual growth, according to some new material of Landis and Bolles.[347] A study of 100 cases including orthopaedic defects, spastic paralyses, epilepsies, and cardiac diseases revealed a striking under-emphasis of sex in their life histories. Some of these handicapped women seemed to be sexually neuter in the sense that they never passed through the ordinary phases of development. Masturbation, homo-eroticism, and heterosexual contacts were much less common than in normal women, and sex possessed little affective value for them. There was no evidence that the indifference was in reality a Freudian mechanism concealing unconscious desire. Indeed the sexual deprivation was but rarely a source of unhappiness. The physically handicapped woman apparently adjusts her aspiration level to her capacities so as to produce the minimum of frustration and stress.

In contemporary society it not infrequently happens that a restricted early environment produces a 'psychological castration' which is more likely to affect women than men because of their more limited outside contacts. In many cases of this kind, energy is directed toward non-sexual objectives and the individuals may grow up as in the case of the physically handicapped, with little sex interest or frustration and the capacity to live happy and useful lives without sex as the focus. In other cases, lack of opportunity for marriage may represent a very severe frustration. The desire for love may continue into late maturity just as in the married, and it may drive these women to build a marriage pattern out of other relationships.[421] Sublimation of sexual interests into constructive social channels may be the best solution for increasing numbers of women who are destined to remain single in

the generation following the present war. In the past it was little short of tragic for a woman not to marry. Her unhappy lot as reflected in the American novel during the past hundred years is a sorry one indeed She was seldom the major character, and in the rare instances when she was, she was depicted as unattractive, disagreeable, or pitiable.[170] The elevation in social status of the woman worker as a result of the conspicuous part she has played in the war should give the role of the single woman more prestige than it has hitherto enjoyed either in fact or fiction.

CONJUGAL BEHAVIOUR PATTERNS

First Intercourse Whether the first intercourse occurs before or after the marriage ceremony, the psychologically important thing is that the partners be ready to assimilate the new experience. So important is the bride's reaction to her first coitus that it may serve as an index of later marital adjustment.[609] In Davis's study of 1000 married women, nearly twice as many of the happy as of the unhappy individuals found their first coitus pleasant, and fewer of the happy found it repellent.[168] Conversely, 36 wives, whom Terman found to have shocked or disgusted attitudes toward first intercourse, averaged below the mean of those who enjoyed it, in general happiness ratings.[609] At first sight these correlations might seem to lay undue stress on a single experience. It is not what happens at this time, however, which has such great import for the future It is rather what has happened earlier in the way of social conditioning which determines the reaction to this experience. Since fear is the arch-enemy of vegetative function, it is especially important to dispel any fears that may surround the first sexual act The spectre of pain may be ruled out by having the hymen anaesthetically ruptured by a physician before marriage [176, 601] The fear of pregnancy is another bogey-man that may haunt the bridal chamber. This in turn may be controlled to the benefit of parents and future offspring by providing the young couple with the necessary contraceptive information [418, 419] With adequate preparation the complete sex act is easily assimilated. As Dickinson and

Beam point out, it is only where 'an elaborate ceremonial is a cloak for ignorance' that the bridal night is the beginning of tragedy.[178]

Female Frigidity. Faulty attitudes toward sex and the female reproductive functions bring in their wake a wide variety of 'women's troubles'. We have already noted the importance of attitude on the menstrual function. Other somatic conditions that may have a psychic origin include deterioration of the breasts, pregnancy nausea, sterility, and even fibroid tumours, uterine displacements, and other organic pathologies[416, 419, 425] In marriage, one of the most troublesome obstacles to sexual harmony is the inability of wives to experience orgasm, the sudden, fully releasing climax of coitus. Although a marriage handicapped by the wife's sexual failure may survive, even happily,[202, 349] it could survive more happily otherwise. Dickinson and Beam reported 34 per cent of their maladjusted women lacking in orgasm capacity as compared with only 12 per cent of the happily married group.[178] Moreover, a correlation of +·30 has been found between a wife's orgasm capacity and general marital happiness,[609] and, according to Hamilton, unless orgasm accompanies at least 20 per cent of copulations there is likely to be trouble ahead[259] In view of these considerations, it is disturbing to find that approximately every third woman is inadequate in this respect.[87, 168, 259, 349, 609] Even higher proportions have been as recently reported as 1940.[150] This undesirable situation is in part a relic of the Puritan tradition according to which frigidity is ladylike, as illustrated in the following case of Dickinson's.[178, pp. 129-30]

Case 975. A frail and delicate woman of forty-six comes about marital problems. She is pallid, sad, has always been cold. .. She had excessive Puritan training. She and her husband were engaged for years – seeing each other only rarely. 'Father told me not to kiss him – mother said she never kissed her husband until after marriage'

No one told her there was any pleasure for a woman until three or four years after marriage. Relatives told her repressive things about coitus Her mother said, 'No good woman ever has pleasure; passion is for the vile ... I'd be ashamed if I enjoyed it.'

Frigidity is not merely an *absence*, but rather a *blocking*, of desire. The inadequate woman is not indifferent to sex, but as a matter of fact spends more time in sexual fantasy than the adequate.[203] In most cases the trouble is psychogenic. In Dickinson's series of 100 frigid women there was not a single one in which an organic cause proved to be basic.[178] It may represent inadequacy feelings resulting from parental rejection, a retention of childish dependency on parents, a conflict of mores, hostility toward the husband, or an unconscious repudiation of the feminine role. Personality failure, however caused, may be expressed in neurotic frigidity.[115, 259, 609] Although certain physical defects may indeed affect orgasm capacity, psychological factors are of much more importance in both cause and cure.[484] According to one gynaecologist, all cases in his practice except those due to hysterectomy or degeneration of the spinal cord were accessible to psychotherapy.[87] Even in cases of hormonal deficiencies where androgens have been successfully used as sensitizers,[245, 522] the resulting improvement in libido may be partly attributed to the psychotherapy which is an inevitable accompaniment of the hormone injections.

Painful intercourse, like frigidity, is often due to inhibitions of a psychological nature.[178] A case in point is that of Miss Y, cited by Mengert.[415]

The patient, a single woman of twenty-eight years, instructor in a university, complained of painful intercourse She had been engaged for over a year but her marriage had been postponed for financial reasons. The couple had agreed to indulge in sexual relations during the interim. After a few months Miss Y began to experience pain Medical examination revealed no physical cause for the difficulty but the patient was obviously suffering from emotional conflict due to her deviation from her puritanical upbringing.

Male Impotence. Sexual inadequacy is not limited to the wife but may also occur in the husband with just as grave threat to the relationship. Hamilton states that unless a woman is frigid, marriage to a man who is definitely inferior in sexual capacity is not likely to be successful.[259] As in the case of frigidity, impotence is not uncommon. Some idea of its

prevalence may be gained from spontaneous questions submitted to the Vienna Institute for Sexual Research. Bien's analysis showed that 32 of the first 50 concerned some form of impotence. In his opinion, a similar percentage is to be expected from those having sexual difficulties in the general population [88]

Like frigidity, impotence represents a blocking of response to appropriate stimuli. In some cases the source may be found in hormonal or other organic disorders,[85, 525] but in the vast majority the cause must be sought in environmental pressures [128, 159] Precipitating factors include fatigue, pain, fear, feelings of inadequacy, and emotional conflict which often concerns the marriage [346, 417, 511, 609] In such functional cases, psychotherapy has been successful when administered either intentionally or incidentally.[423]

Patients with partial impotence have been found to recover when merely reassured of their physical normality.[385] Treatment with androgens and various physiotherapies, although remarkably effective when there is a somatic basis,[571] does not consistently result in improvement in psychogenic cases.[128, 159, 346, 423, 494, 571, 666] Since a strong dose of suggestion is administered with every dose of drug or hormone, suggestion rather than hormone may well be the therapeutic agent in successful cases. This interpretation is supported by the fact that no apparent loss results from substitution of a control oil for hormone without the patient's knowledge. In certain cases complicated by severe neuroses, androgens may even make matters worse by aggravating the conflicts, and psychotherapy must first remove the basic difficulty.[128]

It is hardly necessary to point out that the mutual adequacy of both marriage partners colours all their sex practices and provides a rich source of relaxation and companionship which vitalizes the whole relationship. Since sexual failure so largely represents social rather than biological difficulties,[210] the burden of cure, or, better still, prevention, rests with society.

Coital Frequency During the first year of marriage the frequency of intercourse is a more direct reflection of sexual drive than it is later on. As time passes, coitus often becomes so routinized that sheer frequency of occurrence denotes little

concerning either sexual drive or general adjustment in marriage. Unhappy couples, even those on the point of divorce, indulge almost as often as and sometimes even more often than happy pairs.[178, 609] It is not the absolute frequency but the relative satisfaction of both mates that is important. A given numerical index might signify exact correspondence of sexual need between marriage partners, or it might reflect wide discrepancies according to whether it represented a mutual spontaneous expression or domination of one partner over the other. In this connexion we may point to Terman's data showing an apparently greater role of the wife in determining coital frequency. Curves comparing preferred with actual frequencies showed close correspondence for wives but discrepancies for husbands indicating desire in excess of fulfilment.[609] Obviously such discrepancies reflect the cultural pattern. That cases where the wife's passion exceeds that of the husband are rarer is to be expected. But in whichever direction the discrepancy lies it militates against conjugal bliss,[139] and equality in sexual drive, whether expressed in much or little coitus, is conducive to the greatest satisfaction.[609]

Cultural factors are also responsible for frequency differences in occupational groups such as those indicated in Table 12 based on Pearl's data.[480, p. 203] Consistent with Pearl's findings for the professional group are statistics gathered from other high-income groups indicating an average of once or twice a week.[259, 609]

TABLE 12. *Average Coital Frequency per Month by Decades of Age and by Occupation*

(Mean number of times per month)

Age	*A* Farmers		*B* Merchants and bankers		*C* Professional men	
	N	Mean	*N*	Mean	*N*	Mean
15–19	14	8·9 ± 1·8	31	5 6 ± 0 8	46	4·2 ± 0·5
20–29	29	15·4 ± 1·6	56	12 9 ± 1·5	54	9·7 ± 0 9
30–39	37	14·8 ± 1·3	65	13·7 ± 1·2	68	11·8 ± 0 8
40–49	39	13·7 ± 1·3	67	11 5 ± 0 8	68	10 1 ± 0 7
50–59	39	11·1 ± 1·3	66	8 7 ± 0·7	64	7 0 ± 0 5
60–69	28	7·1 ± 1 4	49	6 4 ± 0 6	53	4·4 ± 0 4

According to Maslow, coital position does not always have dominance significance but only among insecure persons who feel compelled to assert their dominance in every relationship. We should not overlook the fortunate individuals who combine high dominance with high security feelings. In such people sexual behaviour is a relatively direct expression of spontaneous sex drive. Free from the restrictions of traditional taboo or personal timidity, they are able to enjoy to the full their sexual companionship. Marriage between two such individuals involves experimentation of all kinds. Various coital positions and many forms of deviant sex behaviour are tried out for the mutual satisfactions they yield.

Extramarital Experimentation. Sometimes the spirit of experimentation goes beyond the bounds of matrimony. In the emotionally secure, the extramarital affair may provide an outlet for sexual energy not entirely absorbed by the spouse. Landis found some cases of this sort among the most mature and independent women of his group.[349] In spite of happy marriages they were sexually not wholly satisfied by their husbands. In the emotionally insecure, however, as Maslow suggests, the motivation of the extramarital affair is not primarily sexual. It is too hastily consummated to yield the satisfactions of a long-continued monogamy. It should be regarded as a 'security affair' through which the individual hopes to gain needed reassurance as to personal attractiveness and, in cases of homo-erotic fear, reassurance as to sexual normality.[115, 397]

Sex relations out of wedlock are sometimes used to work off unconscious hostilities toward the spouse. In this connexion it is interesting to find that exhibitionism and peeping frequently have a similar significance. In the present writer's clinical experience, such perversions often represent overcompensation resorted to by ineffectual or sexually inadequate men as a means of punishing their wives for receiving the attentions of other men and at the same time of bolstering up their self-esteem. A similar interpretation is also suggested by other data.[31, 549]

For the most part, extramarital sex behaviour of various

sorts indicates personality maladjustment. It was found in 24 per cent of abnormal as compared with 4 per cent of normal women.[349] Negative correlations of $-0{\cdot}52$ for husbands and $-0{\cdot}46$ for wives have been reported between frequency of desire for extramarital intercourse and happiness in marriage. In view of its relationship with general maladjustment, extramarital interest, whether in deed or in fantasy, should be regarded in most cases primarily as a symptom rather than a cause of marital unhappiness.

Although we may have to penetrate beneath the extramarital fling to find the basic cause of the unhappiness, we need seek no further for the precipitating cause of final disruption.[139] In our society with its emphasis on private ownership, the 'triangle', no matter what its motivation, cannot be successfully combined with most marriages and provides an unassailable excuse for divorce. In fact, social pressure is so great that the individual is hardly permitted to overlook an indiscretion of his mate's but must display the expected righteous wrath and, by legal action, vindicate himself in the eyes of all. Usually the social stereotype has been so thoroughly interiorized that he sincerely believes himself outraged and in the absence of psychiatric advice is likely to regard the infidelity as an unpardonable sin.

THE PREDICTION OF HAPPINESS IN MARRIAGE

Approaches to the Problem In the course of our discussion of the various aspects of sex in marriage we have pointed out their relationship to happiness in marriage as a whole This leads us to the question of prediction. If we know the factors correlating with success and failure, their measurement *before* marriage should enable us to predict the outcome Indeed Terman considers the evidence so encouraging as to warrant the startling assertion that the compatibility of a given couple may be predicted from scales now available about as effectively as college success from a three-hour scholastic aptitude test or four years of high-school marks[609] The evidence referred to represents several different approaches to the problem. One approach is through statistical analysis of anony-

mous questionnaire returns from large groups of subjects. Of this type, Davis' work on women college graduates has become a classic.[168] On the basis of a crude rating scale she separated happy from unhappy couples and compared them with respect to many factors chiefly of a sexual nature. A decade later, Burgess and Cottrell introduced a more elaborate measure of adjustment in marriage, based on correlations of a wide variety of personal interactions with the subjects' own happiness ratings.[115] They took the important further step of working out a prediction scale from correlations of background information with total adjustment scores. Terman and others, following Burgess and Cottrell's general method with certain elaborations, have also worked out a prediction scale.[609] Since both these studies used couples already married, the results suffer from a marital 'halo error'. The existing state of happiness or unhappiness obviously invalidates the method as a means of predicting the future compatibility of a couple before marriage. An attempt is now being made to validate the technique by starting with engaged couples and following them over a period of years. So far the results appear to confirm the hopes of the originators.[661] On the basis of over 500 couples, Burgess and Wallin report correlations of more than 0·40 between adjustment in engagement and after three years of marriage.[118]

Another approach to the problem of predicting marital happiness is clinical. This method has the advantage of dealing with the individual rather than the average and of thus giving a longitudinal in contrast with a cross-section picture. Psychoanalysis in the course of unearthing sources of personal maladjustment in general has thrown much light on the psychodynamics of marital conflicts. A more specific attack on the problem was made in Hamilton's famous work which came out almost simultaneously with that of Davis.[259] He introduced a controlled psychiatric interview which required an average of eight hours for each subject On the basis of data obtained in this way from 100 married men and 100 married women, he compared the happily with the unhappily married on a large number of items and worked out a marital

satisfaction score. Similar in general method was the comparative study of sexual development in normal and abnormal women recently published by Landis *et al.*[349] Dickinson and Beam's *A Thousand Marriages*[178] is altogether unique inasmuch as it is a series of medical case histories covering a half century of gynaecological practice. It gives a perspective on the whole subject of marital adjustment to be found nowhere else

Because of the discrepancy between verbal expression and behaviour, Moreno claims that his psychodrama offers a more valid method for the diagnosis and cure of marriage difficulties than the psychoanalytical or interview techniques. On a stage, complete with lights to fit the mood, married clients are encouraged to work out their spontaneous solutions to a variety of marital problems After the performance their reactions are analysed and inadequacies pointed out.[427] In cases that require divorce, the therapeutic theatre may be of further use in helping the partners to understand and accept it as the best solution [568]

Still another way of approaching the problem is through the sociological study of domestic discord. Typical of this approach is Mowrer's analysis of factors causing difficulties in cases from the Jewish Social Service Bureau of Chicago [430] Ciocco has contributed to our knowledge of factors in marital disruption in a novel way by analysing the letters received by a popular public counsellor from 390 women requesting advice on their domestic problems.[139] Such studies of marital pathology aid in prediction by indicating the danger points

We shall not risk the reader's patience by presenting the separate studies. The material is meticulously detailed and, as William James once said of the forbidding psychophysics, 'Those who desire this dreadful literature can find it '[310, p 549] In the present case they can find most of it conveniently reviewed by Terman and Johnson[610] and by Burgess.[114] Instead of presenting the original results, we prefer to trace the broad outlines of the collective findings and their implications for predicting happiness in marriage.

The Experience Variables. The studies are in striking agreement concerning the importance of the early home situation

in an unhappy marriage. They commanded respect for their rugged strength and self-sufficiency.

For marital happiness the personality pattern seems to be one of flexibility, willingness to fit in and make the best of things as they are, rather than to express the self too forcibly or to try to reform the partner. We should bear in mind that the correlations reported merely indicate association and in themselves do not imply causal connexion. Theoretically there is as much justification for thinking that an unhappy marriage would distort the personalities involved and result in neurotic tendencies, as that these tendencies, existing previously, would result in the unhappy marriage. Although the issue is far from settled, the evidence on engaged couples, which has direct bearing on the problem, gives weight to the personality correlates as *causal* factors in marital adjustment.

Do Like marry Like? The question of the attraction of opposites has been the subject of a number of studies[496] The findings are in essential agreement that the affinity of like for like exerts a greater influence in mate selection than the attraction of opposites. Recent investigation of 1000 engaged couples confirmed previous results obtained on married groups Homogamy was reported for height, weight, health, physical attractiveness, neurotic tendency, and a variety of personality traits.[116] An interesting point was that even greater similarities were found in the *cultural* factors of family background, nationality, religious affiliation, social participation, conceptions of marriage, and courtship behaviour.[117] Supporting evidence of the importance of community of interests for marital success has been reported concerning attitudes toward feminism and the family.[332, 333] It appears from this evidence that similarities in cultural values are of greater importance in conjugal compatibility than temperament.

SEX IN MARITAL HAPPINESS

The trend of the literature is to attribute to sex a secondary rather than a primary role in marital adjustment Personal congeniality resulting from shared values and social attitudes seems to lead to harmony in the physical relationship. Happily

changes in personality and outlook during the long separation periods. This is so serious as to constitute a threat even to old married couples. Under normal conditions man and wife have an opportunity to grow and change together gradually. In wartime not only do they fail to enjoy this mutual interchange, but they are each making acquaintances among the opposite sex. The relaxed mores under which these new contacts are made also contribute to the disruption of the marriage bonds.[101, 471]

Although the prospects for war marriages in general are less encouraging than for normal marriages, each case should be individually evaluated. If entered upon by mature, emotionally independent persons whose anticipations take into account the unusual and precarious features, the war marriage may prove even hardier than the conventional variety.[505]

FAMILY STRUCTURE AND SOCIAL ROLE

The marriage relationship is not adequately fulfilled either biologically or psychologically unless it results in a new family. Once again we find attitudes of paramount importance, for they may determine whether or not conception will occur. It is almost a commonplace for pregnancy to follow the adoption of a child in a sterile couple. The following case illustrates psychogenic sterility:[508]

The wife had been denied feminine behaviour in childhood because her father expected her to compensate him for his frustrated desire for a son by behaving more like a boy than a girl. After her marriage she still lacked the opportunity to play the 'feminine role' because she had to continue working to satisfy her husband's emotional dependency on her. Although both partners expressed a desire for a child they remained sterile until they decided to adopt a baby. When the date was set and arrangements made for the wife to give up her job, she suddenly conceived. Although the details of the psychosomatic mechanism are not known, the reduction of the wife's hostility toward her husband presumably played an important part in the total picture.

No less important are psychological factors in pregnancy. Difficulties in the domestic situation are likely to become

acute at this time. Economic problems may be expressed in anxiety,[292] while resistance to the female functions may be manifested in nausea.[419] Indeed, some form of invalidism is almost inescapable because of prevailing social expectation of varying degrees of incapacitation. This has usually meant a discontinuation or marked change in the expectant mother's daily routine which may induce emotional conflict. The continuation of normal activities as far as possible by normal women would make for a more wholesome attitude toward maternity.

To meet adequately the challenge of child rearing demands emotional maturity on the part of both parents,[612] with a full appreciation of their respective roles. As we have repeatedly pointed out, the changing family pattern of Western culture makes it difficult for adults as well as for growing boys and girls to know what is expected of them. In the patriarchal structure which still persists in much of Europe authority is vested in the father who provides the economic support and metes out the punishment. The role of mother is to give suck to the children with whom she shares fear of 'the master of the house'.[224, 225] In American society democracy has led to the overthrow of patriarchism in greater or lesser degree according to the subcultural setting of the local community. In its place, there is no single democratic pattern. Kirkpatrick describes three wifely roles. the *traditional wife and mother* carries with it the privileges of security, respect, domestic authority, economic support, and loyalty on the part of the husband. It entails the obligations of rearing children, making a home, and rendering domestic service. The *companion*, in contrast, involves sharing pleasures with the husband, receiving emotional response, and leisure for society and education. In return for these privileges, the good companion preserves her beauty, provides her husband with ego and libido satisfactions, and makes advantageous social contacts for him. The third role is that of *partner* with economic independence, equal authority in family finances, and social acceptance on an equal footing.[335] There is much overlapping among these various roles leading to confusion and conflict on the part of

both men and women.[336] There is even evidence of an increasing discrepancy between the sexes in their attitudes toward women's role.[331] Among married couples, such discrepancy was found to be greater for the unhappy. In line with this is the tendency for male domination[139] and patriarchal attitudes on the part of the husband to be associated with marital maladjustment.[332]

In apparent inconsistency with the rejection of male authority is the contemporary American woman's adherence to the social stereotype of 'male provider'. In a study of disruptive factors in marriage, non-support was in the lead. The most significant finding was the fact that the greatest number of complaints came from women with independent incomes. These cases obviously represented not real need, but feelings outraged by the husband's failure to measure up to social expectation.[139] As long as the husband is expected to be the sole supporter of his family, every woman with a job becomes a threat to his security.

Within the home, the institutional vestiges of male authority threaten the wife who in the name of freedom has usurped the power for herself. Crumbling patriarchism has given way to the stern matriarchy of the domineering mother. Since this domestic despotism is not upheld by social sanctions, it carries a note of defiance which is communicated to the children to the detriment of their emotional development.[163, 408] Instead of the warmth and reassurance they need for growth, they sense rejection and respond with fear and resentment.[225] The following case cited by Weigert symbolizes the tragedy inherent in the confusions and frustrations of the mother role:[648]

'Mrs X' suffered a reactive depression upon the induction of her sons into the armed forces. Before her marriage, she had been frustrated in her ambitions by the traditions of her parental home. Her father was convinced of the intellectual inferiority and emotional infantilism of women. Her mother was a typical Victorian housewife

During marriage, she vacillated between ambition for a career and discouraged withdrawal into the security of family life Each

pregnancy was accompanied by misgivings as to whether or not she wanted the child. Her repressed ambitions were taken out on her children in over-protection against which they protested vigorously. Their departure for war aroused feelings of guilt over her personal ambitions and precipitated her collapse.

The situation might be mitigated if fathers were to exchange roles with mothers and make up to their children for the mothers' domination, by surrounding them with the love their mothers withhold. This, however, is not the case. Within the empty shell of outmoded patriarchism the father remains a figurehead. The outward form has not changed but it has lost its substance. In other words, fathers have lost their old authoritarian role in the family and have not assumed any other in its place. This observation was borne out by a recent survey of the attitudes and activities of 300 fathers which indicated that they had not thought very much about the role of father. They continued to shoulder the economic burden of maternal provision. They were also aware of the importance of companionship with their children and, in the majority of cases, felt that they were pals. The fathers gave their children social and intellectual guidance during adolescence, but only a little more than one-third of the group took the responsibility for their sex education. In general, the father's role as depicted in this study seems very amorphous and inadequate. Since the time spent at home is sufficient for plenty of fathering, the chief need seems to be a clearer definition of the role.[230]

A more widespread adoption of the partner role in marriage would be in keeping with the shift from the patriarchal to the democratic family structure. It would mean mutual sharing both in the world of achievement and in the world of sentiment. If the burden of success which the father carries alone were divided with the mother, he would be psychologically freer to cultivate his family. If, in turn, the mother were given the opportunity of expressing herself in the outside world, she would be relieved of the need for compensatory arrogance within the home and could love her family without ambivalence.

CHAPTER 14

Sexual Decline

ADOLESCENCE finds its companion piece in senescence. The many parallels remind one of a mountain climber who after a steep ascent lingers long at the summit to enjoy the broad perspective he has so arduously achieved. Then as the shadows lengthen, he reluctantly starts on his downward trail. The terrain has not changed, and many of the same obstacles are encountered on the way but now from the opposite direction.

PHYSIOLOGICAL CHANGES

Endocrine. The adolescent endocrine upset incident to the onset of reproductive functions is matched by a corresponding disturbance at their close. Although sexual decline is very gradual in both sexes, it is made more conspicuous in women by the cessation of menstrual periodicity.[214] Among white women of Western culture, this process takes place during the forties, although it has been noted as early as thirty-five among Negroes and as late as sixty among the Senegalese.[412, 576] Unless the depression of ovarian activity is accompanied by a corresponding degeneration of the pituitary, it brings in its train a temporary derangement of the entire endocrine network. The pituitary, usually balanced by ovarian and adrenal oestrogens, secretes gonadotrophic hormone to excess but to no avail because it is incapable of stimulating the sluggish ovary.[652] The special thyroid- and adrenal-stimulating principles of the anterior pituitary often complicate the picture. Different patterns of menopausal symptoms have been distinguished as correlates of different glandular patterns during the period of transition.[284] Eventually, an adreno-pituitary balance succeeds, as it once preceded, the ovario-pituitary interchange of the active reproduction period.[516]

Neural. The endocrine changes exert a disturbing effect on the autonomic nervous system which causes neurological reverberations in certain individuals. In women the meno-

pausal syndrome includes such neural signs as fatigability, insomnia, hot flushes, vertigo, cardiac irregularities, as well as the more psychological disturbances of anxiety and depression.[122, 387, 555, 650] Vaginal smears provide an index of oestrogen effects. With dosage properly adjusted to the patient's needs, atrophic smears can be advanced within a short time to a phase characteristic of the height of ovarian activity.[86, 474, 521, 544] Whether or not the endocrine replacement is accompanied by psychological relief depends on the patient's previous emotional adjustment. Women of good morale and outlook can absorb more organic insults and are more receptive to beneficial effects of hormone therapy.[555]

Analogous changes occur in men,[412, 265] but they set in later and follow a slower course so that the organic symptoms tend to be somewhat attenuated.[462] Moreover, there are no horror stories to aggravate the psychological discomfort. The efficacy of androgenic treatment is illustrated in the following case history.[384, p. 1042]:

Case 7. A man fifty-eight years of age consulted the doctor complaining of irritability, excitability, and melancholia, accompanied by almost complete sexual impotence.

Examination revealed rather small testes and a slightly enlarged thyroid. The administration of a powerful androgen, *testosterone propionate*, brought about rapid improvement. Within approximately two weeks he was nearly normal sexually, and his melancholia and irritability had subsided markedly. After sixteen months of treatment his potency was still normal, and there was only the slightest occasional suggestion of depression.

These striking effects match those of endocrine administration in lower mammals. We have suggested that at the human level there is in addition a psychological factor which invariably accompanies the injections and usually supplements and reinforces the glandular component. It has even been found to function with notable success in the absence of hormones.

PSYCHOLOGICAL CORRECTIVES

Attitudes. So important are psychological imponderables that they may compensate for and thereby obscure the very

symptoms of which the patient complains. For this reason, although the physiological disturbances may be subjectively marked, they are difficult to measure. In an attempt to do so, Seward and Seward[544] applied a series of psychomotor tests to a small group of women complaining of menopausal symptoms. Comparison of performances after oestrogen replacement with those following control injections of saline solution failed to reveal consistent differences Apparently the tests served as a challenge to the subjects, putting them temporarily on their mettle, thereby enabling them to make a creditable showing. In the humdrum of their daily lives, however, they were free to give way to their symptoms.

Further evidence of the role of motivation appeared in the upward trend of morale throughout the experiment, a trend which was uninterrupted by the substitution of control dose for hormone. So therapeutic was the effect of serving in the experiment with the personal attentions it involved, that the subjects enthusiastically defended the treatment despite the recurrence of organic symptoms. For example, after two weeks of salt injections one subject, while forced to admit that she felt no stronger, insisted that she was mentally improved and more stable emotionally. Another contended in the face of hot flushes that if it were not for the treatments she could not keep up. In still another case a return of insomnia was blamed on everything except the inefficacy of the 'shots'. These findings, in confirmation of those reported by others,[261, 524, 555] emphasize the importance of attitude toward the climacteric experience. Although removal of physiological symptoms by endocrine therapy may be desirable, it is of even more importance to reorient the whole personality by means of psychotherapy. Seen in the light of a constructive general outlook, the specific symptoms lose much of their power to disturb.

Personal Equation. Apparently it is not the occurrence of the physiological symptoms as such that is significant for adjustment but rather the meaning attributed to them by the patient. In our competitive society the chief need of the individual member is some measure of personal security. Anything that interferes with its attainment endangers his happiness.

Certainly with the high value placed on sex in Western culture, the onset of physiological decline is a serious threat to social survival.[477] Particularly is this true for women, who to an unfortunately large extent still acquire and maintain their status through the arts of love. The greater independence of men explains in part why their psychological reaction to climacteric changes is less extreme and less frequently results in psychotic breakdown.[309, 468] In either sex, individuals with a secure and happy history behind them come through this critical period with the least personality damage. Ability to cope with problems of sexual decline depends on previous preparation no less than ability to cope with adolescent and adult problems. A person who feels himself a dynamic part of the social group, contributing to it through useful work, is able to assimilate the disagreeable aspects of the climacteric with a minimum of stress. For him they indicate merely the temporary inconvenience of transition from the active responsibilities of maturity to the quieter tempo and greater personal freedom of later life.

For the insecure person with rigid attitudes and little humour the climacteric may assume an air of sinister finality. The changed physiological status serves only to accentuate his feelings of inadequacy. Unable to face the future he looks back into the past, dwelling on the might-have-beens. With past and future offering so little comfort, his only anchor is the present. Under the circumstances, a catastrophic experience such as the death of spouse, loss of position, change of residence, and other unforeseen events, may be sufficiently traumatic to bring about the collapse of his brittle adjustment.[462, 469]

Psychopathology. Climacteric breakdown may appear in a variety of psychoneurotic symptoms. One patient may complain of vague, vast, formless fears and suffer from groundless jealousies.[469] Another with perfectionistic tendencies may be assailed by more specific anxieties lest his scrupulous inhibitions give way.[261, 652] In others the neurosis may centre around such symptoms as unreality feelings, compulsive acts, hysterical phenomena, functional visceral complaints, or phobias.[122]

In rare cases more extreme personality deviations occur, manifesting themselves in the form of any psychosis.[201, 205, 311] The changes of psychosomatic involution, however, are especially conducive to a particular syndrome, involutional melancholia, in which emotional depression is the principal feature.[390] Guilt feelings, expressed either directly or projected in paranoid fashion, often play a conspicuous part in the picture.[428, 580] Episodes of the most acute anxiety and despair characterize the disorder during which the patient may wring his hands and pull out his hair Under the stress of inner turmoil there is naturally a loss of interest in the ordinary affairs of life, with consequent attention and memory difficulty,[652] sometimes leading to dementia.[252] Taken as a whole, the picture is one of an overwhelming sense of inadequacy.

Climacteric maladjustment is also expressed in the sphere of sexual and family life. In a critical study of the life histories of 50 cases of involutional melancholia, a large proportion of the married patients, both men and women, were found to be sexually inadequate.[469] It is not without significance that the women who had children with whom they had maintained good relationships were among those who recovered. The psychosis obviously did not penetrate their personalities so deeply. The normality of their family life may in itself have served as a protective sheath and also provided a strong incentive to recovery Of undoubtedly greater prophylactic importance, however, was the fortunate combination of factors, learned and unlearned, which made them sufficiently normal in the first place to have established a wholesome family life.

Treatment for involutional melancholia as for the typical menopausal syndrome must involve a reorientation of the whole person Hormonal replacement helps by relieving physiological discomfort but gives disappointing results for psychological symptoms.[468, 507, 533] Psychotherapy must be aimed at freeing the emotions Sympathetic attention to the patient's troubles affords release. Relaxation of various forms also has a beneficial effect. According to Palmer,[468] no method of discharging accumulated tensions in the psychotic cases

can compare in therapeutic value with convulsive shock treatment.

SEX IN THE AGEING

In our society reproductive and sexual functions are often confused. Because of the glorification of youth it is customary to regard people past reproductive activity as past sexual activity also. This stereotype is reflected in the apologetic attitudes frequently expressed by older patients toward their own sexual indulgences. Western culture does not worry about the sex practices of the ageing as it does about those of youth, but it unwittingly taboos them by ridicule. In so doing it unnecessarily restricts the range and richness of the individual's social relationships and turns him in upon himself. Just as we found society responsible for the storm and stress of adolescence, we find it no less responsible for the storm and stress of senescence.

Impotence. The combined physiological and social limitations on sex decrease the individual's general feeling of adequacy and lead directly to sexual impotence. The interesting thing is that the impotence may be more psychic than organic. Certainly frigidity is not an inevitable outcome of menopause if we may judge by one of Dickinson's patients, who, though over sixty, became so erotic during a pelvic examination that it was necessary for him to inflict pain to spare her the embarrassment of orgasm.[178] Climacteric impotence and frigidity often represent a fear reaction to socially expected change and may even anticipate the major physiological changes. In his clinical practice Hamilton reported that the men who came for relief from failing sexual potency were between thirty-seven and forty years of age – well ahead of physiological climacteric.[261] He pointed out that from the late thirties on there are both conscious and unconscious reactions to sexual decline which are of the greatest importance. Cases of this sort easily yield to psychotherapy. Even the post-climacteric impotence does not seem to be a terminal age change but may be reversed during psychoanalysis. Hamilton cites cases of elderly men who after the absence of

people. They have fewer opportunities, largely because of the stereotype of middle-aged staidness. Moreover, they have less time for relaxation, at least until after retiring age, because of family and financial responsibilities. These and other factors help to explain the trend toward less frequent intercourse with advancing age. Clinical analysis of individual cases is needed to reveal the significance of coitus in the lives of the ageing.

Auto-eroticism. The climacteric frequently has an introverting effect on the individual. Feeling at a disadvantage in coping with immediate realities, he is likely to lose contact with others and become absorbed in himself. Thus we encounter a 'negative phase' in reverse. The individual is regressing to earlier modes of adjustment and entering upon his second childhood. The path of least sexual resistance is masturbation, which is widely practised in the later decades. It is of more common occurrence in the sixties than in the previous two decades.[261] Among widows over forty, auto-erotic practices are almost universal but reluctantly admitted because of disapproving mores [178] Psychosexual regression often leads to even more infantile forms of satisfaction As a result of his extreme self-absorption the senescent person is apt to become a hypochondriac, preoccupied with the homely functions of digestion, excretion, and other bodily processes.

Sexual Abnormalities. During the disturbances of adolescence and senescence, inhibitions do not function so rigidly as at other periods, and impulses break through which are normally held in check, thereby causing the individual great anxiety. He may suddenly become aware of homosexual trends he did not realize were there. Insecure persons are often shocked to find that they have been harbouring sadomasochistic impulses which have been hitherto successfully repressed. And so with many other socially unacceptable sexual impulses, including pseudo-erotic advances to younger members of the opposite sex. As in the case of the extramarital affair, such adventuring is usually motivated by a need for reassurance as to personal charms rather than by pure eroticism.

For the most part male castrates present the expected picture of sexual decline complicated by the nervous and vasomotor symptoms which characterize the climacteric. As in senescent cases replacement by androgens is often effective. For example, a forty-two-year-old man whose testes had deteriorated as a result of a hernia operation four years earlier, showed marked improvement in strength and libido after only one week's administration of testosterone propionate. The treatment was continued for three weeks, followed by the injection of sterile water. The patient continued to feel strong and happy for a few weeks after the control dosage was started before he was again beset by fatigue and depression. Renewed androgen administration restored his stamina.[296]

The wide range of individual differences in castration 'tolerance' may represent differences in compensation for gonadal insufficiency by other glands or in the threshold of the central excitatory mechanisms. Further research is necessary before we can untangle the intricacies of the endocrine network involved and make use of that knowledge for prediction and treatment in individual patients.

The most extreme effects are found in cases in which the castration occurs before puberty or in which there is a primary failure of the gonads to develop. Not only do such people suffer from a lowered energy level and sexual inadequacies, but their effeminate figures and voices and generally youthful appearances are a constant source of embarrassment.[264, 325, 628, 633] It is no wonder that many do not fit into a society which rewards the go-getter, but tend to withdraw into their 'shells'.[506] The following case of eunuchoidism in a young man concretely demonstrates these points:[127]

The patient was a clerk in an accounting department of a fire insurance company. He was unmarried and lived with his mother and six unmarried siblings. He came to the psychiatrist complaining of sensitivity over his youthful appearance.

Up to puberty his behaviour had been normal. His failure to mature and his lack of interest, however, undermined his self-confidence and he developed perfectionistic trends and religiosity. His

depend upon the patient's pre-operative personality. On his personality also depends the efficacy of the treatment. The function of therapy must be to restore not merely the hormonal balance but the individual's self-esteem. In achieving this aim the element of suggestion, which we have found an invariable accompaniment of endocrine therapy, is of the greatest value. In fact, psychotherapy alone has aided sexual expression in castrates as it has in climacteric cases.[164] Perhaps the best therapeutic agent one could hope for would be the replacement of superstitions prevailing in the public mind by the knowledge that castration does not mean the end of normal living.

In the course of our study of different animal forms, we found that in general the higher we ascended the phylogenetic scale the less exact was the correlation between behaviour and biological state. At the human level, sexuality is so complexly motivated and so dominated by factors of attitude and social expectation that it is difficult to filter out the psychological overtones that have blended with and enriched the biological fundamental. In tracing the development of sex from childhood to maturity, we found that satisfaction was increasingly dependent on personal and social factors. Similarly in sexual decline, gonadal depletion, whether due to senescent changes or surgical removal, need not deprive the individual of sexual satisfactions and attendant feelings of social adequacy. He can adopt a constructive attitude toward his condition with little difficulty provided that the society of which he is a member is properly informed and psychiatrically oriented.

CHAPTER 15

Differences between the Sexes

BEFORE we can properly evaluate sex roles and indicate lines along which improvement in the relationship between the sexes should be attempted, we should become familiar with those sex differences which have a direct bearing on the problem.*

BIOLOGICAL FUNCTIONS

Male Superiority in Size and Strength. According to Linton, the double standard is probably as old as the primate order. Perhaps the statement should be extended to include the entire phylum Chordata Our comparative survey of the vertebrates revealed, with few exceptions, a male superiority in size and strength Behaviourally this appeared very consistently as male dominance until we reached the primates. Here dominance did not bear a simple one-to-one relationship to physical prowess because less tangible social-personality factors complicated the picture. In species like the baboon, dominance was of a brutal, physical sort, in others, such as the chimpanzee, it depended not on physical superiority alone but rather on 'total personality'. The superior strength seemed to result in the male's assuming greater responsibility for females and young.

Among humans, superior size and strength give men an advantage over the 'weaker sex' in coping with primitive conditions and have had an important effect on the development of social institutions. This physical advantage is the origin of the conventional lead enjoyed by men in most societies.

* A more complete account of sex differences, including such physiological conditions as basal metabolic rate, hemodobin, resistance to infection, and others, that may indirectly affect behaviour, may be found in A Scheinfeld's *Women and Men*, Harcourt, Brace and Company, New York, 1944, pp. xx+453, which appeared after the present volume had gone to press.

Even in so-called 'matriarchies', the ultimate control is vested in the males. Although a husband may have no authority over his own wife and children, he will control some other woman, usually his sister and her children. The primary importance of hunting and defence for survival under primitive conditions increases the social importance of the men who perform these necessary tasks. When, however, any group becomes mainly dependent on an occupation engaged in exclusively by women, their social status is correspondingly raised. A situation of this sort was observed by Mead among the Tchambuli.[409] Although legal dominance rested with the men, the basic work necessary for subsistence was in the hands of the women. In this society, it is the women who fish and weave the mosquito nets which are traded for other food and supplies. These functions win for them a high measure of respect and prestige although their power is *de facto* rather than *de jure*.

As the struggle for existence becomes less of a hand-to-hand affair, sex differences in physical strength assume increasingly less importance, and the ground is prepared for equality of status between the sexes. The correlated dominance, however, in competitive societies such as ours still gives men a very real advantage.

Female Sex Functions. An unfailing cultural argument for the differentiation of roles according to sex is based on the biological difference in reproductive functions. Hardly a society exists which does not point up the assumed handicaps of women. The menstrual phenomena are surrounded with fear and superstition the world over. During this period a woman's freedom is variously curtailed. She may not cook, she may not associate with men, or she may have to remain in complete isolation in a 'menstrual hut'. Even our own enlightened society is not free from similar taboos. Menstruation is frequently referred to as 'the curse', during which the woman may not indulge in normal physical activities. The paralysing suggestions contained in such social stereotypes seriously affect women's own attitudes toward this function, and it becomes a handicap indeed – a handicap induced by culture

rather than biology. As we have seen, it is only in the exceptional cases with pathological involvements that menstruation actually interferes with the usual range of activities. Moreover, our survey of scientific studies of menstrual effects failed to reveal evidence of cyclic impairment in the performance of psychological tasks.

As we have already pointed out, the disturbances often associated with the close of woman's reproductive life also spring largely from tradition Menopausal depression is often a reaction to the prevailing notion that social as well as biological usefulness is over. We have indicated the importance of psychotherapy in the cure of such conditions. We might easily take the further step of prevention by instilling the healthy attitudes toward this natural function from the beginning through appropriate education.

Similar arguments apply to women's most important biological function, childbearing. We have suggested that women in our society are encouraged to assume a delicate-condition instead of a normal-condition attitude toward themselves. We have noted that this means a discontinuation or marked change in their workaday lives, with frequently resulting 'vacation neuroses', coupled with a hypochondriacal absorption in physical discomforts and symptoms. After childbirth, society further excuses and even discourages women from active citizenship by an appeal to sentimentality although there need be no conflict between wholly adequate cherishing of the child and the continued participation of normal women in the life of the group.

Cherishing activities, because of their association with suckling, are commonly ascribed to women. In spite of this biological nucleus, maternal behaviour is very largely learned. Our study of lower mammals revealed that even at the rodent level, mechanisms controlling maternal behaviour might be brought into action either by internal or external stimuli. The reader will recall that in the rat maternal behaviour was sometimes manifested in normal males and virgin females when caged with young. The mouse showed even greater independence of endocrine factors, maternal behaviour

appearing in animals from which both gonads and pituitaries had been removed. Among primates, individual differences in maternal behaviour were even more conspicuous and experience played a greater part. The role of the father varied from species to species. The father gibbon, for example, shared with the mother in the care of the young and was known on occasion to eat the placenta.

Our information concerning human mothers has been importantly extended by the recent psychosomatic studies of David Levy.[363] On the basis of interviews concerning interests and past behaviour in relation to children, he classified the mothers of his behaviour-problem cases according to degree of maternalism. He then correlated these ratings with measurements of certain physical characteristics, such as duration of menstrual phase, onset of menses, size of nipple, body weight and height. The only significant coefficient was between degree of maternal interest and duration of menstrual flow, where $r = +0{\cdot}579 + {\cdot}053$. The interpretation immediately suggested is that menstrual flow and maternalism represent two levels of functioning through which endocrine factors may be expressed. We should not overlook the possibility, however, that the covariants may merely indicate individual differences in emphasizing or minimizing reproductive functions. In other words, the common factor may be either glandular balance or social attitude. In any case the *individual* variation revealed by the correlation should certainly be utilized in social planning.

We should remember that the differences established concern only the female sex. Whether similar correlations between parental inclination and such physiological measures as blood hormone assays would reveal a range of individual differences in men comparable with those reported for women remains to be discovered. From the present data nothing can be inferred with respect to intersex comparisons. We know that hormonal sex differences depend on the *balance* between androgens and oestrogens rather than on the presence or absence of specific sex hormones. Moreover, we have just noted that among lower mammals normal males often spontane-

the same sex they are negligible.[240] The question remains, however, whether the abilities of women are of the same *kind* as those of men. From a review of the extensive literature that has been ably summarized by Miles,[421] Anastasi,[20] and Allen,[13] certain sex differences in type of ability appear which bear further analysis. The muscular superiority which we have noted in the male may partly account for his superiority in various motor skills. This becomes evident as early as the pre-school period in his superior performance on such tests as peg boards, mazes, and picture puzzles.[649] Among a large group of nursery-school children the boys displayed greater activity and aggressiveness while the girls tended to avoid risks, were timid and more dependent on adult approval.[280] In line with this, boys and men seem to prefer activities involving greater competition and vigour than girls. Even their behaviour problems are of a more aggressive and overt type.[649] Although these abilities and interests rest on a basic muscular superiority, society often entrenches this masculine lead by supplying the boy with mechanical materials and offering him special training, as, for example, in shop. The fact that women show even greater improvement in such activities than men suggests that such abilities are not exclusively hereditary gifts. Under stress of circumstance women have proved equal to men even in this field. The Second World War produced a situation in Western culture in which much of the mechanical work ordinarily done by men and previously assumed to be too heavy for women, necessarily devolved upon them. In the Soviet Union where sex distinctions have been minimized, women have not only been known to fight side by side with men on the field of battle but are reputed to have performed the singularly heroic task of carrying the wounded *on their backs* from the battlefield. Thus training is capable of outweighing natural sex differences in muscular strength, although the desirability of sex equation along these lines under normal conditions may be open to question.

Other areas of male superiority concern numerical and spatial relations. This sex difference is less marked, however, probably because the difference in training is less marked,

although boys are expected to have greater interest and success along these lines.

These specific male advantages are offset by female superiority in other directions. Girls have been found to excel consistently in verbal ability. As babies they begin talking a month earlier than boys and pick up words more rapidly. By pre-school age they are more advanced in language development and maintain their lead throughout school and college years. They have been found to do better on word association tests of various sorts, and on various other tests heavily weighted on the verbal side, such as naming opposites, colour naming, sentence and story completion. The sex difference was clearly brought out in one study based on a mixed group of college students: on the verbal part of a scholastic aptitude test a large and reliable sex difference was obtained in favour of the women, which was reversed on the numerical part of the same test with the same subjects.[20] In another study comparing large groups of men and women Negro college freshmen, the same sex differences in verbal and numerical abilities were revealed, although there was no difference in gross score.[124] Added support for these trends may be found in a marked sex difference in favour of women in ability to write English found among over 6000 candidates on a college entrance examination.[574] The basis of the female flair for words is not clear from the evidence. It may be that the girl and woman turn to symbolic rather than motor expression as more in keeping with their muscular inferiority and their domesticating environment. It would be instructive to see whether women show the same verbal superiority in cultural groups which make equal or greater physical demands upon them.

Feminine prestige rests not only on verbal accomplishment but on artistic merit as well. Girls and women are reputedly more sensitive to colour and music Their greater responsiveness to colour may in part be based on a native superiority, since colour blindness is assumed to be sex-linked and appears in a much higher proportion of males than females.[141] It may, however, be largely the product of greater experience with colours through such domestic activities as dressmaking and

interior decoration. As for musical ability, a crucial experiment was recently performed on 1000 college students of both sexes to determine to what extent the long-standing claim of female superiority was justified.[232] Actually the women did come out better on the tests. The significant point, however, was that the differences disappeared when only *untrained* members of both sexes were included. Moreover, as shown in Table 14,[232, p. 28] comparisons of students from high and low socio-economic levels within each sex revealed corresponding differences in both musical training and talent. Thus the same differences that exist *between* the sexes because of social pressure are found *within* each sex according to economic

TABLE 14. *Four-cornered Comparison by Sex and Economic Level*

Economic Level	Female		Male	
	Per cent trained	Average Score	Per cent trained	Average Score
High	84	212	55	202
Low	65	201	22	195

status This seems to be convincing proof of the superior role of nurture over nature in producing sex differences in musical talent.

In general we may assume that the greater freedom and independence granted the male in our society induce a more objective and impersonal curiosity about the world which finds expression in geography, history, general science, and mathematics. The more sheltered life of girls, on the other hand, leads to preoccupation with domestic affairs. The greater dependence on authority leads to greater conscientiousness in assigned tasks and may also account for a better showing in school grades.

Interests. The differing patterns of interest displayed by the opposite sexes show an obvious relationship to the abilities just described. From an early age boys are more interested in manipulating their environment, but social channelling may be largely responsible. As we have seen, sex typing begins at birth and one effective means of impressing it upon the

vocational fields. Where men and women are engaged in a given occupation, the question arises as to whether or not sex differences in interest patterns may not create different overtones To test this possibility Seder[531, 532] compared the scores of women physicians and insurance saleswomen on the men's and women's forms of the Strong test. Both groups obtained the same ratings on the two forms. Thus patterns of interest seem to vary with occupation, not with sex as such. In other words, a physician does not have different interests according to whether he is male or female, but his interests may differ, regardless of sex, from those of a person who sells insurance.

A comparison of the sexes with regard to employment shows a greater number of men engaged in outdoor work, public service, transportation, commerce, and trade, while women's work is apt to be less vigorous.[421] Special interest attaches to the cases where changing conditions have taken women out of the home. Instead of a redistribution of activities between the sexes, women have tended to follow their old occupations out of the home into the wider world. Meanwhile, men in our culture choose the physically more strenuous and mentally more stimulating types of work. That this represents a sex difference in culturally induced motivation rather than physical energy is suggested by the rapid occupational equation of the sexes which occurs when external conditions demand it. Such a situation has been in effect in the U.S.S.R. since the revolution and has been taking place in western Europe and America since the war began.

Emotional Responsiveness. The sexes have been compared not only for abilities and interests but also with respect to emotional responsiveness. Despite lack of perfect agreement among studies of this sort, the weight of the evidence lies in the direction of greater emotional instability coupled with greater absorption in subjective interests for women.[20, 249, 316, 528, 660] Even before puberty girls show a greater number of neurotic symptoms. After age eleven their instability seems to increase while that of boys of corresponding ages decreases This is a time when differential pressures on the two sexes become

acute. Girls find themselves more and more frequently either in conflict situations in which their role is not clearly defined or else facing severe frustrations that their brothers escape. In addition, they are under the constant anxiety of having to attract a husband or risk their social prestige as well as their economic security. By the time college age is reached, it is no wonder that neuroticism and introversion are revealed in their test scores. College men, on the other hand, show more self-sufficiency and confidence and are less subjectively sensitive and reactive emotionally. Custom in our society with its repression for women and expression for men has reinforced the biological male dominance.

Certain sex differences in personality have been revealed by the Rorschach test. Little girls begin earlier to adjust their reactions to emotional situations.[341] At adolescence an introversive tendency appears in both sexes but is more marked in girls[290] Later, differences between the sexes seem to become equalized.[674]

Social Attitudes In no area of sex differences does culture play a more conspicuous role than in attitudes toward moral and social issues. As one might anticipate from a knowledge of the more sheltered conditions under which they live, women tend to be more conservative.[558] This is especially true where religion is concerned[126, 317, 321, 376, 658] What this means concretely in specific situations, however, will depend on the current scene. To be a pacifist in peace-time is a sign of liberalism; in war-time, of reactionism or worse. Attitudes are relative to the time, place, and specific conditions under which they are expressed and must be evaluated against such backgrounds if they are to be meaningfully interpreted. The greater susceptibility of women to religious and superstitious beliefs is a case in point. In one study including 548 families, the sex differences varied with age and occupational level, being most pronounced for the youngest and poorest. The marked sex differences at the lowest age level are best interpreted as owing to the fact that boys break away from parental attitudes at earlier ages than the more cloistered girls. Moreover, since cultural differentiation of the sexes tends to be

more pronounced at the lowest economic levels, greater sex differences would be expected in such groups.[439]

With respect to the evaluation of moral attitudes, sex differences are less marked. In studies in which the seriousness of transgressions was ranked by men and women only slight sex differences appeared. Very high correlations have been found between rankings of offences by high-school boys and girls [561] as well as by college men and women.[105] In a very recent experiment in which the moral attitudes of university men and women were compared, anonymous judgements were called for concerning a variety of acts. These included cheating, rape, sex relations outside of marriage, lying to parents, and drinking. The results showed striking similarity between the sexes on all issues except the sexual which the women rated as more serious than did the men.[559] Confirmatory evidence has been reported on college students from different geographical regions.[160]

Mental Masculinity-femininity. The most ambitious attempt to quantify mental sex differences in our culture is the attitude-interest analysis, or M-F test of Terman and Miles.[611] The test, based on actual differences between large groups of men and women, includes such exercises as word association, information, emotional and ethical responses to imagined situations, and expressions of interest in a wide variety of topics.

The test serves as a kind of scale to measure the degree to which a given individual fits the typical mould of his sex in our culture. The authors summarize the results obtained from applying the test to 6000 people representing a cross-section of American life[611, pp. 447-8]:

From whatever angle we have examined them, the males included in the standardizing groups evinced a distinctive interest in exploit and adventure, in outdoor and physically strenuous occupations, in machinery and tools, in science, physical phenomena, and inventions, and, from rather occasional evidence, in business and commerce.

On the other hand, the females of our groups have evinced a distinctive interest in domestic affairs and in aesthetic objects and

occupations; they have distinctly preferred more sedentary and in door occupations, and occupations more directly ministrative, particularly to the young, the helpless, the distressed.

The males ... manifest greater self-assertion and aggressiveness; express more hardiness and fearlessness, and more roughness of manners, language, and sentiments.

The females express themselves as more compassionate and sympathetic, more timid, more fastidious and aesthetically sensitive, more emotional in general, severe moralists, yet admit in themselves more weaknesses in emotional control and (less noticeably) in physique.

TABLE 16. *Scores of Men and Women in the General Population on the Terman-Miles Masculinity-femininity Scale*

Score \ Sex	Male	Female
+201 to +220		
+181 to +200	6	
+161 to +180	4	
+141 to +160	14	
+121 to +140	36	
+101 to +120	42	
+ 81 to +100	72	
+ 61 to + 80	95	
+ 41 to + 60	101	5
+ 21 to + 40	78	18
+ 1 to + 20	60	30
0 to − 19	51	50
− 20 to − 39	32	76
− 40 to − 59	6	104
− 60 to − 79	6	103
− 80 to − 99	1	117
−100 to −119		85
−120 to −139		58
−140 to −159		32
−160 to −179		12
−180 to −199		5
−200 to −219		1
N	604	696
Mean	+52·58	−70·65
S D dist	49·93	47·51
S D Mean	2·03	1·80

These clear-cut qualitative distinctions between the sexes reflect equally clear-cut quantitative differences, as shown in Table 16.[611, p. 72] The distribution of M-F scores is clearly bimodal, with a narrow overlapping area between. The authors found one male in 100 to score as feminine as the average female of the same age, and one female in 100 to score as masculine as the average male of the same age. Within each sex group there was a wide range of individual differences. Servants, students, and teachers were among the more feminine women, while physicians, college athletes, and members of *Who's Who* were least feminine. Among men, athletes, engineers, and the gifted represented the more masculine extreme, while musicians, clergymen, and artists were least masculine. Figure 8 brings out some of these relationships. It is worthy of note that superior culture and achievement seem to bring the sexes together, suggesting that when inequalities of social pressure are ruled out and members of both sexes enjoy the same kind of training, personality differences between them disappear. The hereditarians may argue that superior education attracts those already showing characteristics of the opposite sex, but the burden of proof clearly rests upon them. The very fact that overlapping is found between groups that are so different in structure supports a cultural interpretation. This interpretation gains further plausibility from the finding that physical measures showed little relation to M-F scores in either sex.

The greatest overlapping in test scores has been reported for various groups of sexual inverts.[49, 287, 611] As we have already pointed out, even in such cases, social rather than biological factors are primarily responsible for the inverted personality pattern.

This survey of sex differences in our society has revealed a male superiority in strength correlated with a tendency to dominate in social situations. Although these differences may have their origin in biology, society may play them up or down Differences at the psychological level, with the possible exception of female verbal superiority, seem to have little if any biological basis but are largely the products of

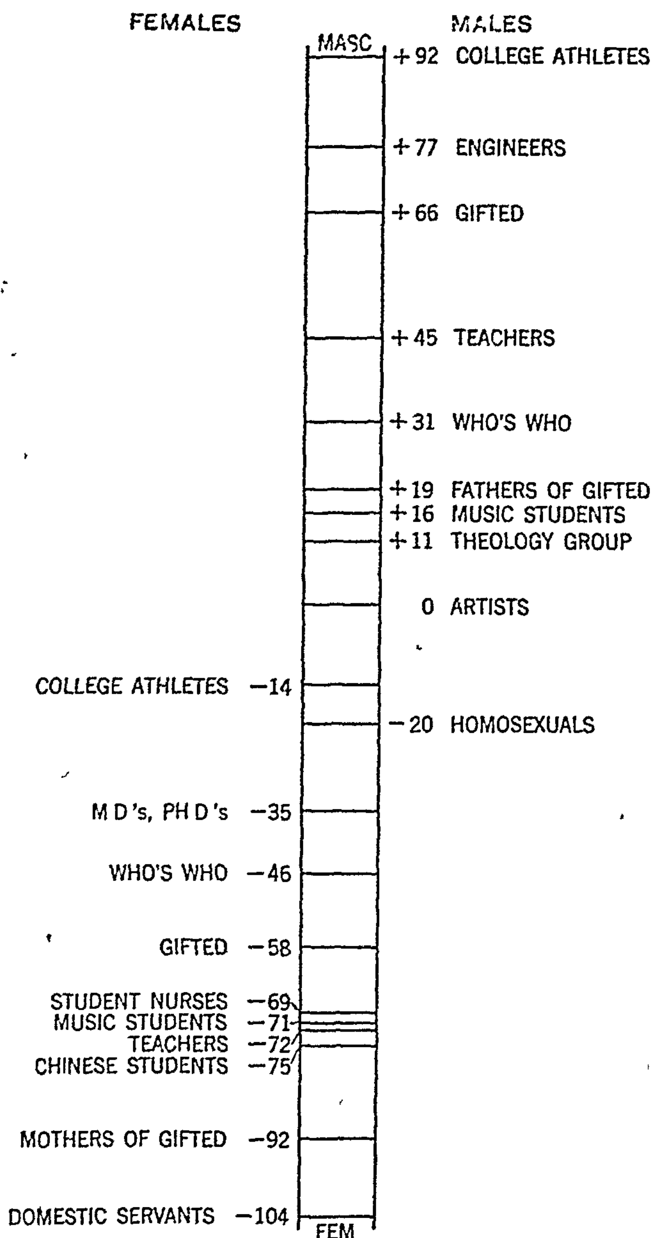


FIG 8. Masculinity-femininity scores of various occupational groups. (*Courtesy of John P. Seward, Jr., after L M. Terman, and C. C. Miles, Sex and Personality, New York, McGraw-Hill, 1936.*)

our culture and reflect the roles assigned the two sexes. The scientific evidence available at the present writing fails to indicate differences attributable to sex membership as such that would justify casting men and women in different social roles.

CHAPTER 16

Sex in Post-war Society

ACCELERATION OF EQUALITY IN STATUS

WE have already noted the increase in status which women have enjoyed in earlier times during prolonged periods of warfare when they have had to shoulder unusual responsibilities In the present era the same trend is apparent The First World War extended the scope of women's work beyond the narrow range of teaching within which it had hitherto been confined.[43] The suffrage Amendment indicated that their improved status was not completely counteracted by their return home after the Armistice. During the Second World War, the trend has been toward economic equality between the sexes. Women's activities have been extended to include practically every area of social living. In war industries they have taken the place of men as grinders, riveters, welders, machinists, and in many unaccustomed jobs As guards they have even been trained in ju-jitsu to be ready to cope with saboteurs if necessary. They have performed on an equal footing with men as workers although they have also had to carry their domestic burdens. As one observer put it, 'Conversion from aprons to overalls is slow because most women must wear both at the same time '[667] Not only have women found their place in industry, but for the first time they have entered the services where their work is often identical with that of men.[382] The service woman, moreover, shares with the service man post-war job priorities. Industrial relocations may conceivably run across the sex line, with the novel result of a service *woman* replacing a civilian *man*. At least there is good reason to believe that economic sex equality may follow the Second World War just as political sex equality followed the First World War.[632] Legal equalities alone will not satisfy the needs of the woman who has participated in the conduct of the war. She also craves self-expression as a wife and mother. In fact the

public nature of group-living has induced in the service woman an over-valuation of the private and the intimate. But while she longs for a husband and children just as the traditional woman always has, her needs are broader and must be met if she is to function constructively in post-war society. Having once felt herself part of a great adventure, she will not fit comfortably into the relative isolation of the conventional domestic role. She will still need to feel herself a part of the life of the group.

The emerging dual role of woman as *worker-mother* will demand extensive readjustments in the social roles of both men and women.

INTENSIFICATION OF CULTURAL CONFLICT

Middletown revealed the ambiguous position of our society with respect to sex roles. We noted a more democratic redefinition slowly evolving within an inherited patriarchal framework. The war-time acceleration of the trend toward equality can hardly fail to intensify conflict with the lagging mores. Evidence of cultural conflict was found in the writer's recent study of the attitudes of college women toward their role in post-war society.[534] The greater equality and independence endorsed for the single woman contrasted sharply with a reactionary adherence to the tradition of socio-economic parasitism for the married woman. A sudden change in role of this kind is fraught with risk of emotional conflict for the individual. Having enjoyed the same educational opportunities and having been motivated by the same vocational goals, the girl who marries finds herself confronted with a reversal of values. She is expected to turn her back on the world of achievement and to concentrate her energies on domestic activities for which she has had little or no previous training and in which she may or may not have any interest. The analysis of the data of the college students revealed that unless the older pattern was reinforced by a patriarchal home background, the girl was thrown into confusion. Her conflict was often expressed by a desire to reject the feminine *social* role, as she faces the post-war world. At the same time she was as eager

to embrace the feminine *biological* role as those wishing to maintain women's *status quo*. Among this group of healthy young women there was no evidence of 'penis envy'. They did not wish to exchange places with men. They wanted to fulfil themselves as women and at the same time to express their abilities in the world of achievement. Thus the emotional conflict in which woman finds herself is of social rather than biological origin. It is a symptom of the confusion that characterizes the transition from an autocratic to a democratic pattern of sex roles.

Repercussions of this cultural transition carry as much risk of emotional conflict for men as for women. As we have noted, the man is still rigidly held to the old patriarchal ideal of provider. Realization of this goal, however, is made more difficult in contemporary society by the competition he experiences with women as well as men. He is thus faced with the necessity of supporting the woman he marries while competing with the unmarried woman. Under these circumstances he becomes increasingly preoccupied with success and can find little time or energy for the cultivation of his family. Having submerged the role of father under that of worker, he tends to glorify the home and to project upon woman his own frustrated desires for the softer values of life.[377]

A SOLUTION

Our study of the scientific evidence suggests certain emphases that may lead to a redefinition of the roles of men and women in post-war society. Under primitive conditions, whether in city slums or darkest Africa, social sex roles are necessarily bound by physical sex differences. The superior musculature of the male has undeniable survival value for the family unit in a literal struggle for existence On a subsistence plane the natural division of labour is for the man to fight and hunt and for the woman to tend the home fires and suckle the young. The male social dominance originally correlated with superiority in physical strength has persisted long after the sex differences in strength have become irrelevant. It continues to function whenever the social struggle makes it advantageous

to have a group subordinated.[411] This mechanism accounts for the authoritarian family structure of bourgeois Western society where the economic system fails to provide the opportunities for everyone to contribute to the group. By confusing women's biological functions with their social role and maintaining male monopoly in the world of achievement, it has been possible to keep half the population from competing for the insufficient jobs available. Under fascism, these trends become exaggerated, with the aid of propaganda directed toward glorifying the reproductive tract at the expense of the cerebral cortex. Within this autocratic social climate 'masculine' is given the destructive connotation of domination and aggression, while 'feminine' is identified with the negative values of passive subservience and docility.

Victory for the democratic way of living means a democratic reformulation of sex roles.[536] Although fighting prowess may be defensible in a militaristic ideology, it has no place around the peace table. The masculine drive to power can be sublimated in constructive *achievement*. This masculine derivative, however, need not be specifically ascribed to the male sex, but women could just as well be encouraged to contribute their gifts to building the new society. Since individual differences in ability outweigh sex differences, men and women should be given equal opportunities to achieve as individuals without regard to sex. Even so reactionary a social planner as Plato recognized the importance of women in the ideal state In his famous *Republic* he writes[483, Bk V, p. 162]:

> Then we shall have to select duly qualified women also, to share in the life and official labours of the duly qualified men; since we find that they are competent to the work and of kindred nature with the men.

The application of this ideology to our society would ensure the full utilization of available talent and could not fail to result in a richer society.

Just as women may learn from men how to achieve, so men may learn from women how to cherish. The deep significance of the life-giving functions, originally associated with the process of suckling, have so far not extended beyond the nursery.

The social possibilities that lie in these functions have been ignored by a war-minded patriarchal tradition which devalued them as 'feminine'. In a democratic economy of peace, however, they acquire supreme importance From the mother, men as well as women may learn the value of giving and loving. The acceptance of these feminine values should not only help in the larger social planning but they should also make for more warmth within the intimate circle of the home. They should replace the unlovely domestic despot with a mother and the figurehead patriarch with a father. After the security-shattering experiences of war, our children are all the more in need of stable, well-adjusted, complete homes in which both mother and father share in the companionship of their children.

This sharing between men and women inside as well as outside the home should improve their private relationships. In a situation where personal satisfactions outweigh frustrations, tension gives way to relaxation that makes all relationships run more smoothly. Far from 'unsexing' either women or men, release from the sources of threat and anxiety concerning one another could have only a constructive effect on sexual relations which would be more highly valued as the means of expressing their greater appreciation

The social pattern we have suggested need not be discounted as a starry-eyed fantasy of utopia. To an encouragingly large extent many of the important features have already been put into effect in socially progressive Sweden [435] To implement the programme demands extensive social reorganization. In the first place, there would have to be economic reforms that would make it not only possible but necessary for every citizen, male or female, to contribute to production as well as to consumption. It is only in this way that men can be relieved of their burden of being the sole support of the family. Moreover, it is only in this way that women will have sufficient motivation to accept their responsibilities to the larger social group and to contribute to it wholeheartedly.

Another important change concerns relieving women of their excessive domestic burden. Co-operative housing, with

community kitchens, laundries, and cleaning services would take care of routine household needs. Day nurseries managed by people especially trained for such work would provide the necessary group experiences for the children while their parents were at work. Freed from the relentless routine of *housekeeping*, women would be able to devote themselves, along with the men, to the affectional and enduring values of *home-making*.

Finally, changes that fundamentally affect social role can become an integral part of group mores only after generations have grown up with them. To accomplish this requires co-operation of educational institutions. From nursery school on, children must be educated to assume their social sex roles. The principal deviations from the traditional would centre around the elevation of feminine values. Boys as well as girls would be trained for parenthood, and contrary to current standards, doll play would become a necessary part of their repertory. On the other hand, more training along mathematical and mechanical lines would be important for girls who are to share with boys in the world's work.

Throughout, the emphasis on increased understanding between the sexes would demand co-education so that boys and girls would have a continuous experience of working and playing together. Hand in hand with general education for social adjustment between the sexes would go specific education for sexual companionship as a positive value. In such a programme, sex would receive the respect that it deserves in the curriculum. The psychosexual growth of children would be as carefully followed as any other phase of their development.

The end result would be a society of men and women deeply appreciative of one another and co-operating in the tremendous adventure of reconstructing Western culture.

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